

FLIGHT

The
**AIRCRAFT
ENGINEER
&
AIRSHIPS**

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor : STANLEY SPOONER

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"FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" Photographs, these can be supplied, enlarged or otherwise, upon application to Photo. Department, 36, Great Queen Street, W.C.2.

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

- May 17 ... Aero Golfing Soc.—Spring Meeting, "Flight" Challenge Cup
- May 18 ... Martlesham Heath Reunion Dinner (Connaught Rooms, 7 p.m.)
- May 24—
- June 9 Royal Tournament, Olympia
- May 27-28 Light 'Plane Meeting, Hamble
- May 30 ... Wilbur Wright Lecture "The Slotted Wing," Mr. F. Handley Page, before R.Ae.S. and Inst.Ae.E.
- June 3-9 R.A.F. Rifle Association Prize Meeting
- June 7 ... 7th Annual Middle East Dinner
- June 8 ... Banquet to Mr. A. V. Roe
- June 9 ... Light 'Plane Meeting, Castle Bromwich

EDITORIAL COMMENT



THE present issue is by way of being a milestone in the history of FLIGHT and of British Empire aviation, containing as it does a detailed illustrated account of aviation as it exists in Australia to-day. For years FLIGHT has upheld the policy that to make full use of the advantages which air travel has to offer, it is essential to operate long routes. Situated as England is, in the south-western corner of Europe, that inevitably means, as far as British flying is concerned, Empire Aviation. And as Maj. Robertson says in his excellent article on Aviation in Australia, which forms the text of the special section in this issue: "What does it matter to the British race if there is no air line between London and Manchester so long as there are most excellent airways in Australia . . ." Amplifying that statement to include "excellent airways in other parts of the Empire," that precisely sums up the situation. It is in the distant parts of the Empire that aviation has most to offer, and it is therefore logical to begin a considered air policy by making the most of such vast opportunities as do undoubtedly exist in the Dominions overseas.

Of these none has more to gain from a network of air lines than has Australia, and we feel certain that after reading and studying the Australian section of the present issue, the British reader will be left with a feeling of justifiable pride in what has already been accomplished in that great commonwealth. That Australians themselves may at times hold that Australia has not done all that she might do need cause no anxiety. Few would dare to claim that in any walk of life. But a study of the mileages flown, passengers and mails carried, and so forth, indicates that Australia has already set a lead for the rest of the Empire to follow. And indications are not lacking which show that this is but a beginning. On their visit to London some time ago, the Australian representatives on the Imperial Conference—and none more so than the Prime Minister, Mr. Bruce—showed themselves fully alive to the possibilities of the air,

and there is now not the slightest doubt that henceforth Australia will follow a strong air policy, not only in the matter of civil aviation, but in service aviation as well. Air Marshal Sir John Salmond is going on a visit for the purpose of studying at first hand the conditions in Australia, and to advise on matters of organisation and equipment. His report will be of the greatest possible value to Australia and to the whole Empire for that matter. By obtaining the views of such a distinguished officer, not only is Australia ensured the best advice possible, but what is even more important from an Imperial point of view, the future development of the R.A.A.F. will be in harmony with that of the R.A.F., merely with such variations as local conditions render advisable. It is to be hoped that on his return he will be invited to pay similar visits to other parts of the Empire.

As FLIGHT circulates all over the British Empire, and reaches even the most remote corners of the world, we feel that in bringing out this special Australian issue we are helping the good cause forward by letting readers in other parts of the Empire know what Australia is doing in the matter of air developments. Only by spreading mutual knowledge and understanding can developments be on sound Imperial lines, and we hope it may be possible a little later in the year for us to issue similar special numbers dealing with aviation in other parts of the Empire.

In his article this week, Maj. Robertson makes a statement which we feel might well be taken up as the motto of future Empire Aviation and kept

prominently in view. He says: "The function of Great Britain is design and experiment; that of the Dominions is operation." Looked at in that light, the services at present operating from London must be regarded mainly as a full-scale experiment, and not as services which are in themselves of any great value *as services*. This brings us to the subject of a revision of the present basis for the granting of subsidies. Sir Samuel Hoare foreshadowed, in his Memorandum accompanying this year's Air Estimates, that an attempt was to be made to find a new basis which would tend to encourage the production and relatively rapid adoption of new and improved types of aircraft. The present basis does not have this tendency, and if Maj. Robertson's dictum is to be accepted, as we personally think it must, until such time as the Dominions themselves are in a position to undertake technical development, it is essential that steps be taken without delay to carry such a policy into effect. Closely allied with this problem is that of linking the Mother Country with the Dominions, but we think that for the next few years at least, the policy which has been inaugurated, of making a beginning in the Dominions and gradually finding ways and means of linking up one with the other, is the right one. Leaving in the main, the land plane for internal work, two lines of development appear to be open: the airship and the flying-boat. The former is still by way of being an unknown quantity, but this year should show actual results. The latter has already proved itself, and should be developed to the utmost of our ability.

"FLIGHT'S" special supplement on aviation in Australia is timely and will, I hope, serve to call attention to the far-seeing and constructive air policy which has for some time past been so energetically and effectively pursued by the Australian Government. The success which has already attended the civil air services in that great Dominion, and the decision largely to extend the existing routes in the near future until Australia is completely ringed by air are convincing evidence that there is a real and growing Imperial demand for the development of air transport facilities. I hope that the progressive example which Australia has set will be widely followed, until in due course the Empire as a whole is linked together by an adequate system of air communications.

Samuel Hoare

"FLIGHT'S" AUSTRALIA NUMBER: Above is a reduced facsimile reproduction of an encouraging message from the Right Hon. Sir Samuel J. G. Hoare, Bart., G.B.E., C.M.G., M.P., Secretary of State of Air, wishing success to our special effort to spread the cult of Empire Aviation.

"FLIGHT'S" SPECIAL AUSTRALIA NUMBER

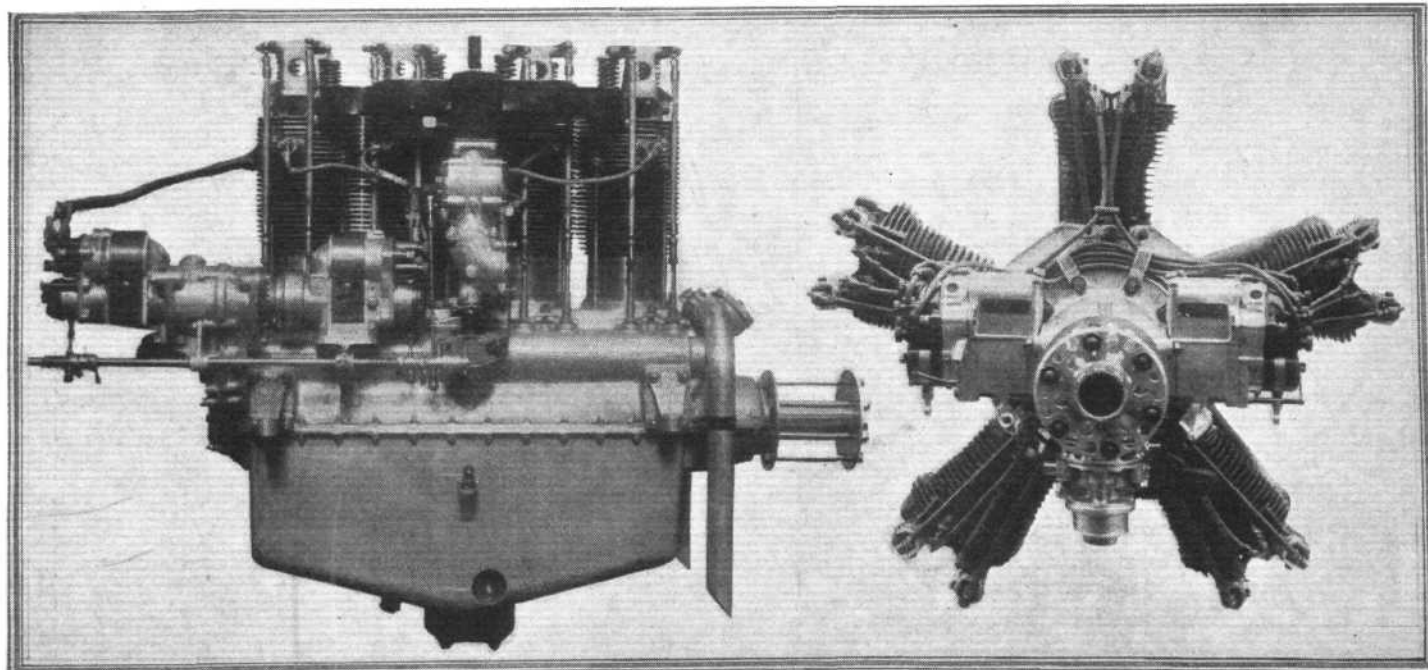
The Beginnings of Empire Aviation

IN the present issue of FLIGHT we publish a special section, printed on tinted paper, dealing with aviation in Australia, and covering, in particular, commercial aviation as it exists in Australia at the present time, but giving also an outline of the organisation and disposition of the Royal Australian Air Force. This section of the present issue has been written by Major F. A. de V. Robertson, but we would also here acknowledge our very great indebtedness to Wing-Commander W. H. Anderson, D.F.C., Australian Liaison Officer at the Air Ministry in London, and Flight-Lieut. C. J. Harman, of the same department, who have given us invaluable assistance in providing information, checking facts and data, correcting proofs, helped in getting together many of the photographs with which the special section is illustrated, and in short assisted us in every way possible. In fact, without their help it would have been impossible for us to have placed before our readers such detailed information concerning aviation in Australia.

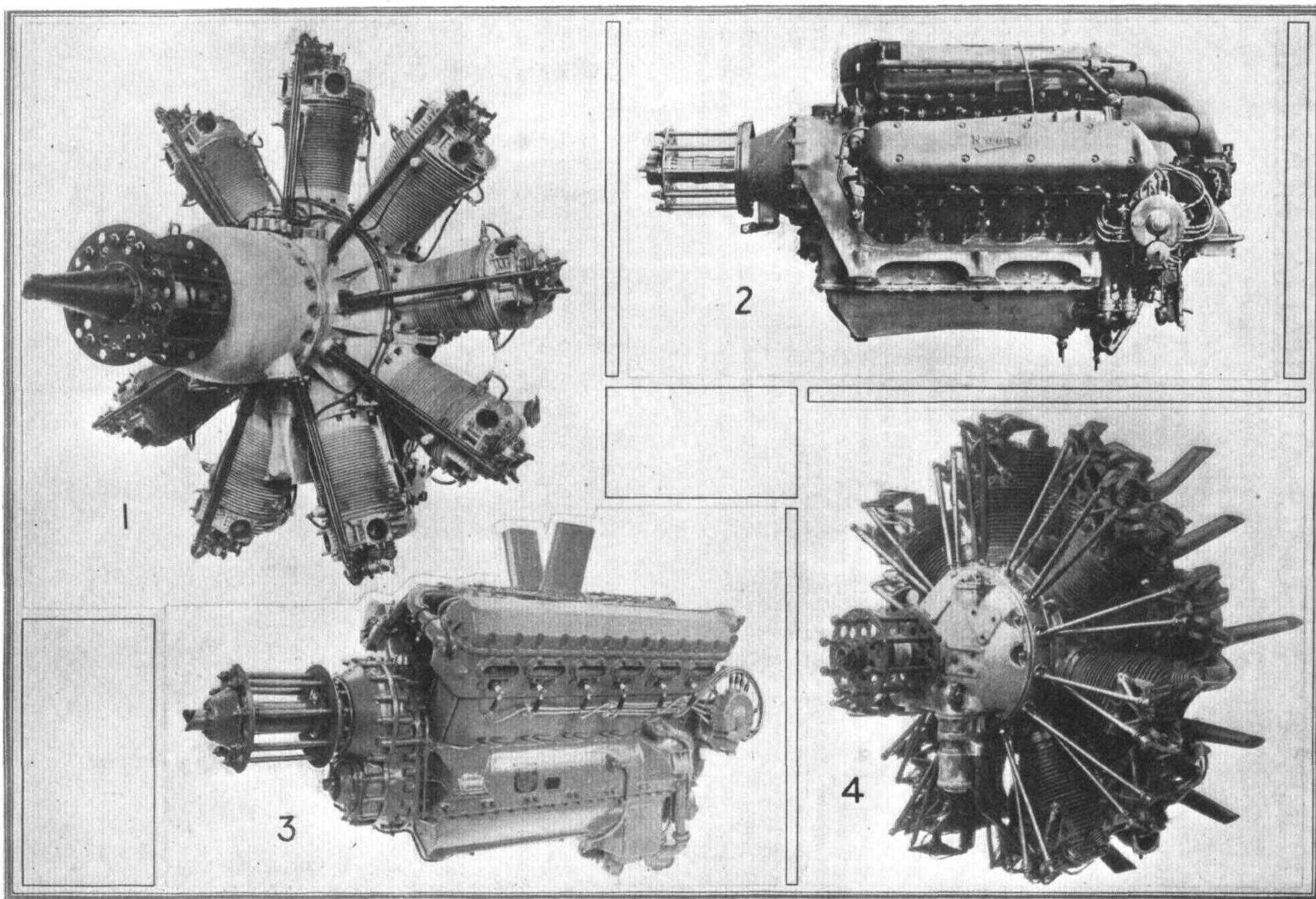
To the Commonwealth Immigration Office, Australia House, and to the Agent-General for Queensland, also, we would express our indebtedness for the loan of photographs illustrating Australian scenes which help very materially anyone not familiar with that great Commonwealth in forming an opinion of the sort of country over which Australian air lines operate, the older forms of transport which the air services supplement, the appearance of some of the great (and small) Australian cities and towns which the air has helped to link up and, in general, in placing before our readers a pictorial representation of that of the British Dominions which has, perhaps, most to gain from a rapid and extensive development of aviation in all its branches.

Last, but by no means least, we are indebted to the Secretary of State for Air, Sir Samuel Hoare, for the kind message of encouragement which he has been good enough to send FLIGHT in connection with this special Australia number. A facsimile reproduction of Sir Samuel Hoare's letter will be found on page 336. Sir Samuel has always shown himself a strong advocate of Empire Aviation and his message to FLIGHT will, we know, be read with the greatest interest not only in Australia but also in all the other parts of the British Empire where the air can and will do so much toward knitting together more firmly the separate units of that great Commonwealth of British Nations.

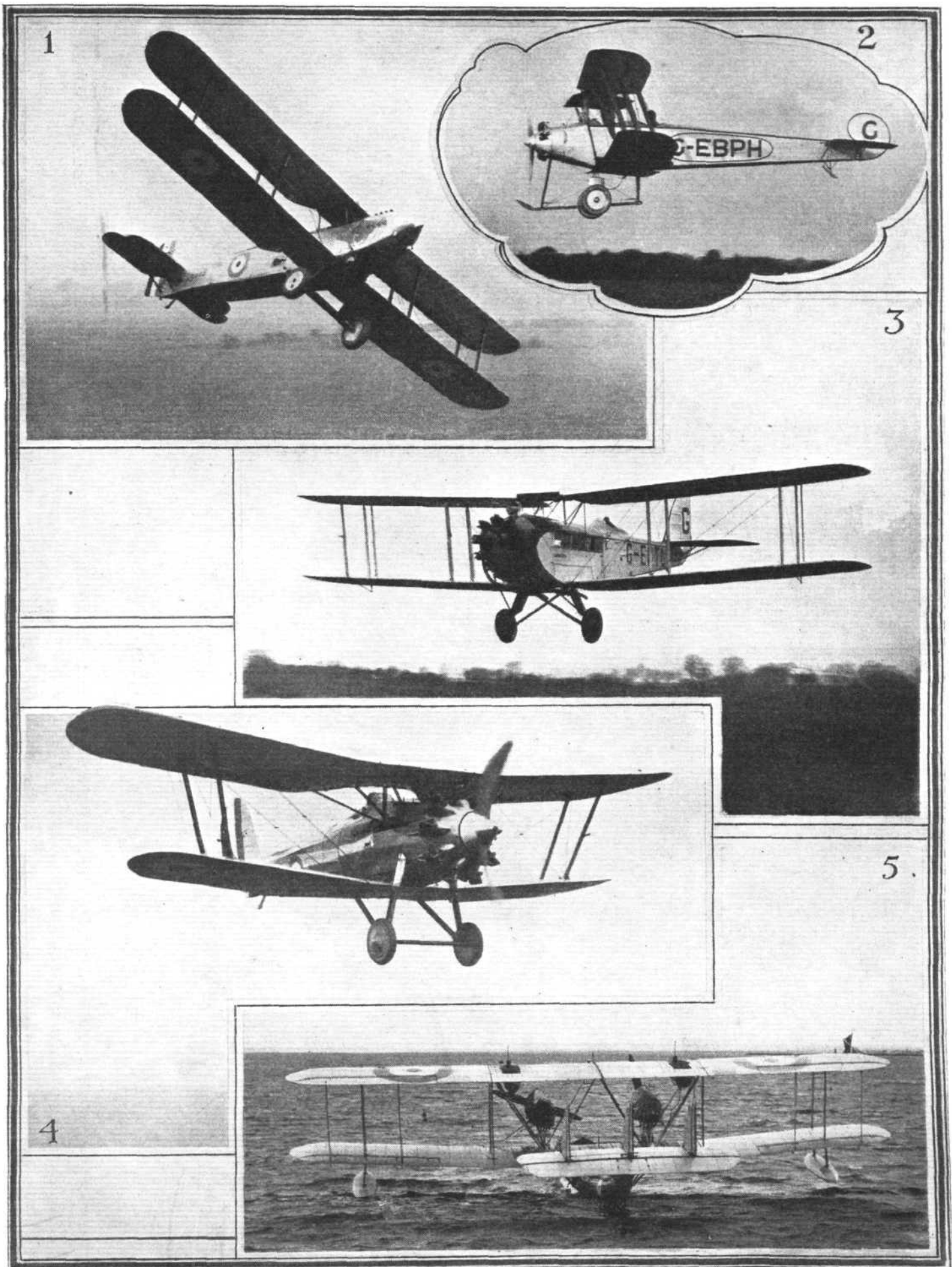
While the special section of FLIGHT this week deals with aviation in Australia, we have thought that, to our cousins "down under," it might also be of interest to include illustrations of some typical British aero engines and aircraft of modern type. Consequently, on this and the next five pages will be found photographic illustrations of a number of aero engines and aircraft of various types. Naturally, in the space available, it has not been possible to include more than a small proportion of the types actually in existence, but it is thought that those illustrated will at least give, to those not already familiar with the subject, some indication of the wealth of types that are now available when the re-equipment of the Royal Australian Air Force is undertaken, and when the Australian air lines begin to look around for new equipment.



REPRESENTATIVE BRITISH LOW-POWERED AERO ENGINES : On the left the 80 h.p. A.D.C. "Cirrus II," and on the right the Armstrong-Siddeley 80 h.p. "Genet." These two types are used extensively on British Light Aeroplanes.

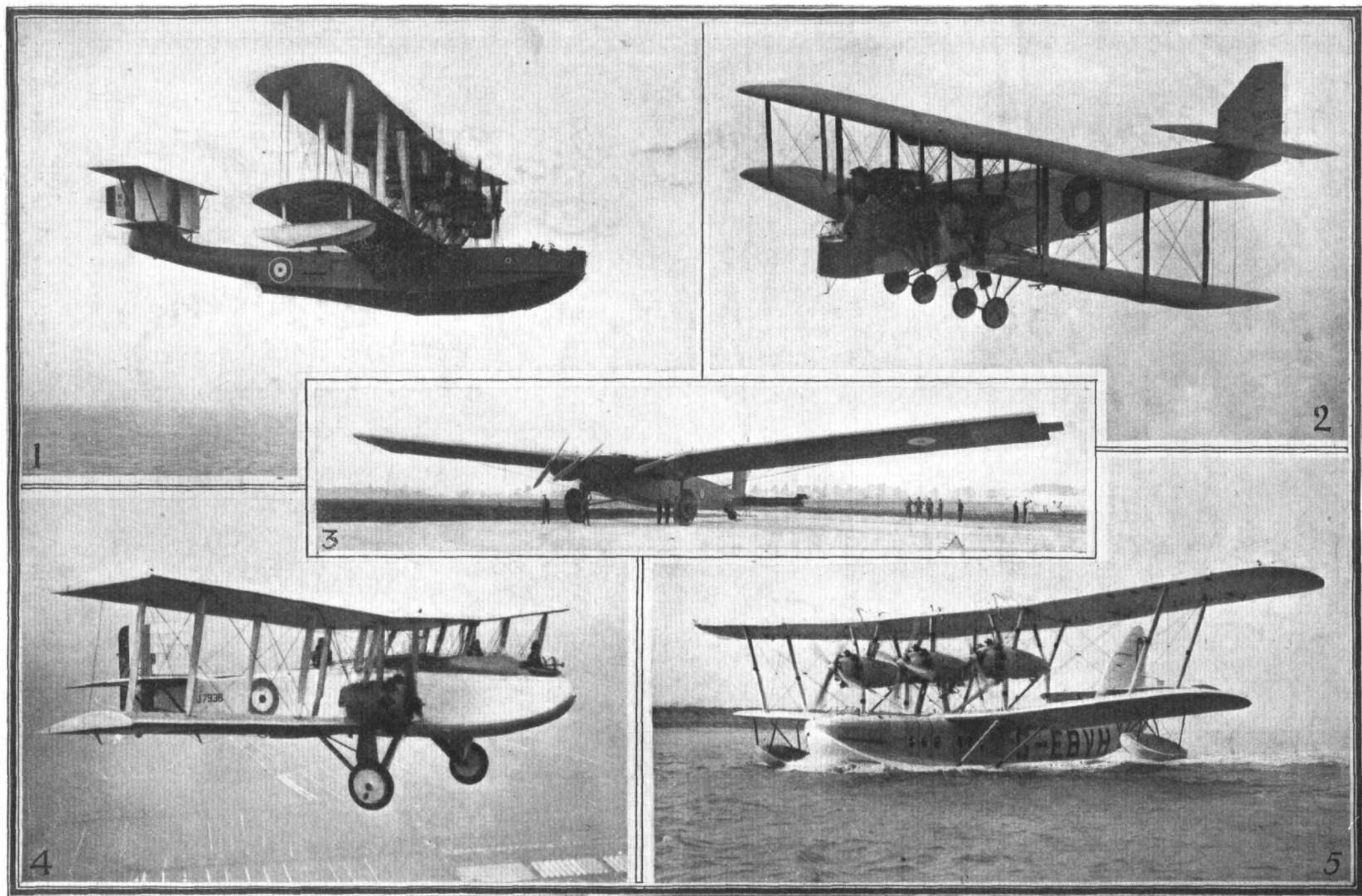


REPRESENTATIVE HIGH-POWER BRITISH AERO ENGINES : 1. The Bristol geared " Jupiter " radial air-cooled. 2. The Napier " Lion XI " " broad-arrow " water-cooled. 3. The Rolls-Royce " F. 12 " water-cooled Vee, and 4, the Armstrong-Siddeley " Jaguar " radial air-cooled.



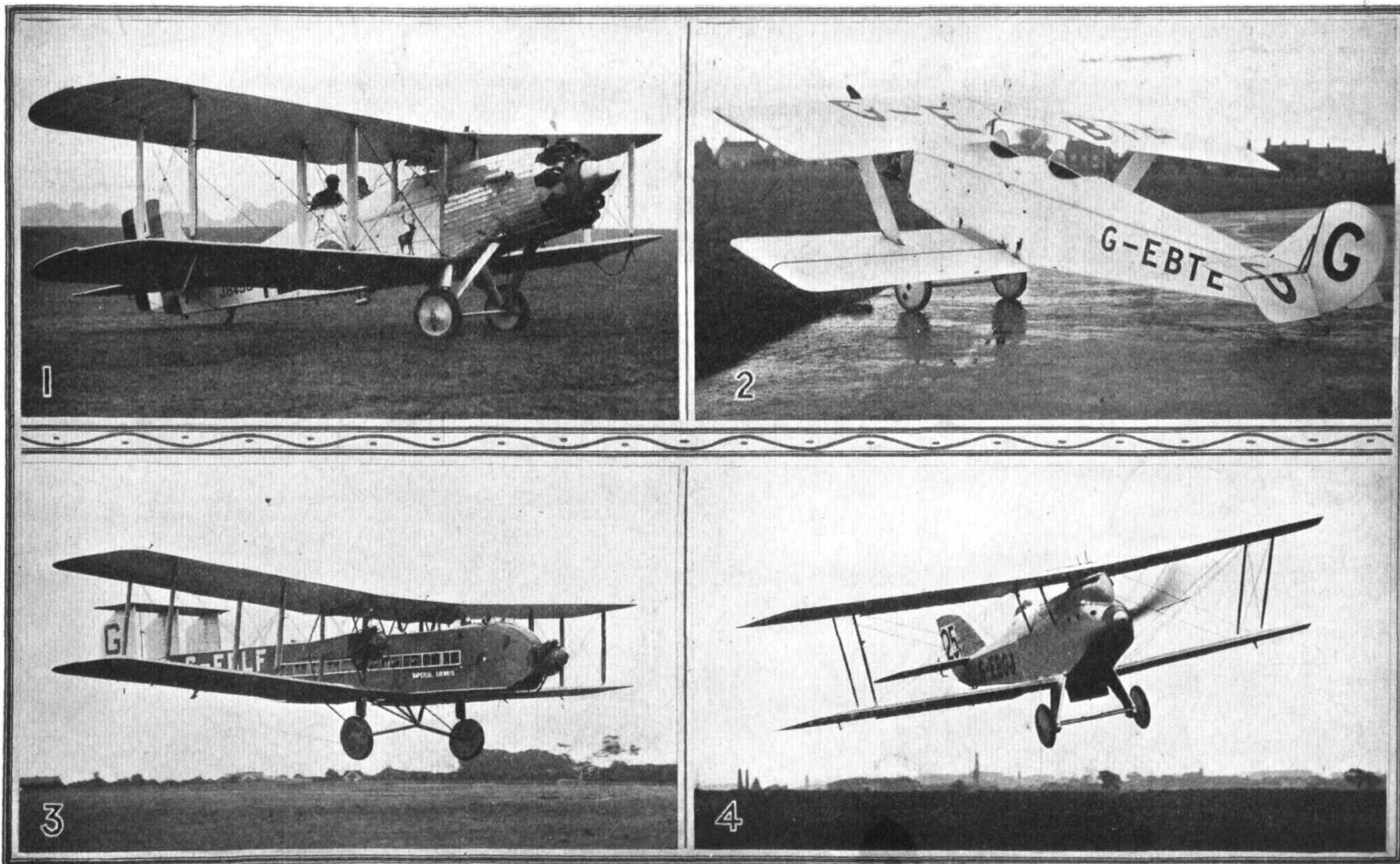
["FLIGHT" Photographs]

REPRESENTATIVE TYPES OF BRITISH AIRCRAFT: 1. The Fairey IIF-Napier "Lion," a three-seater Fleet Reconnaissance machine. 2. The Avro-Alpha training machine. 3. de Havilland D.H.61 "Canberra," with Bristol "Jupiter," a commercial biplane. 4. The Bristol "Bulldog-Jupiter" single-seater fighter. 5. The Supermarine "Southampton-Napier" flying-boat, of which the R.A.A.F. has recently acquired two.



["FLIGHT" Photographs]

REPRESENTATIVE TYPES OF BRITISH AIRCRAFT: 1. The Blackburn Iris II, with three Rolls-Royce "Condor" engines, is a service flying-boat. 2. Handley Page "Hinaiidi-Jupiter" night bomber. 3. The giant Beardmore "Inflexible," with three Rolls-Royce "Condor" engines, is a large experimental monoplane of all-metal construction. 4. The Boulton & Paul "Sidestrand II-Jupiter" three-seater bomber. 5. The all-metal Short "Calcutta-Jupiter" is a commercial flying-boat, and is the first machine of this type to be fitted with the Handley Page automatic slots.



REPRESENTATIVE TYPES OF BRITISH AIRCRAFT: 1. The Westland "Wapiti-Jupiter" general purpose two-seater. 2. The Parnall "Genet-Imp" two-seater light 'plane. 3. The Armstrong-Whitworth "Argosy-Jaguar" commercial three-engined aeroplane. 4. The A.D.C. "Nimbus-Martinsyde" single-seater fighter.

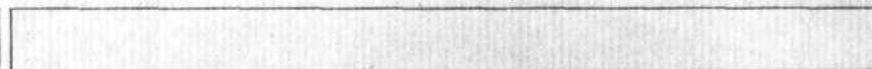
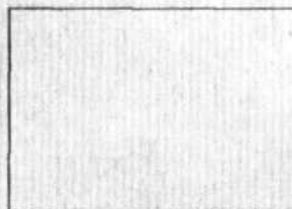
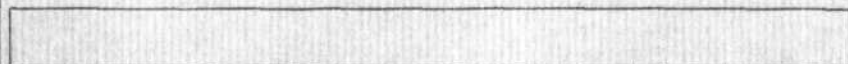
["FLIGHT" Photographs



1



2



3



4

REPRESENTATIVE TYPES OF BRITISH AIRCRAFT : 1. The Gloster " Goring-Jupiter " two-seater seaplane. 2. The Saunders " Valkyrie " flying-boat with three Rolls-Royce " Condor " engines. 3. The Vickers " Valiant-Jupiter " general purpose two-seater. 4. The Hawker " Horsley-Condor " as a torpedo plane.

[" FLIGHT " Photographs]

Aviation in the Dominions

Commonwealth of Australia

AVIATION IN AUSTRALIA

By MAJOR F. A. de V. ROBERTSON, V.D.

"Think Imperially"

If the late Mr. Joseph Chamberlain were alive to-day, he would surely be an enthusiast on the subject of flying. No development of the early years of the 20th century has done more to drive home his famous piece of advice: "Think Imperially." The United States of America can afford to concentrate on an air mail within the limits of the country. Great Britain cannot do so. Her object must always be Empire airways. What is more, while Empire airways take much time and preparation to organise, for they depend upon the technical development of suitable types of aircraft (and attempts to lay them down before such types have been developed are apt to be frustrated by the policy of a foreign power, as has happened in the case of the Cairo-Karachi line), the first important steps must be looked for not in the British Isles but in the Dominions of the British Empire. One sometimes meets people who lament that France and Germany are positive spiders' webs of air lines, while our attempts at

main a full-scale experiment. Moreover, the present position is probably only temporary. In due course, the Dominions will design and build for themselves—the movement has already commenced—while, when the future, indicated by the production of the Short "Calcutta" and the airship R.101 is realised, Great Britain will be the centre of great operational movements.

No Power in the world stands to gain so much from the use of aircraft as does the British Empire. It has been built up because the British were a maritime nation. The parts are separated from each other by wide oceans. But the British Empire cannot be held together only by a mercantile marine. In the 19th century, speed became a prime factor of life. We have learnt and absorbed the sayings "Time is Money," and "Communications are Civilization." Ships are too slow to maintain intimate intercourse between lands so widely separated; and in modern times, communities which are not in close touch tend to fly apart. In early Victorian days



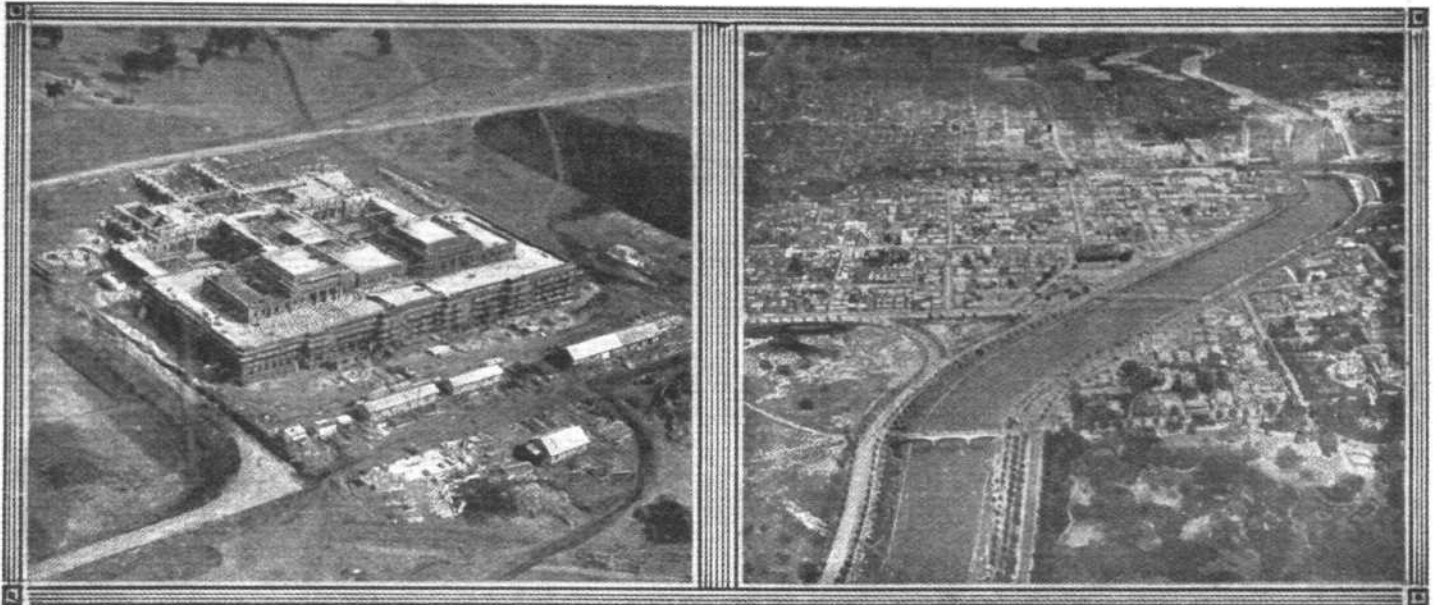
D.H.50A's CARRY DISTINGUISHED AUSTRALIAN PASSENGERS: On the left, His Excellency Lord Stonehaven and Capt. Davidson, prior to leaving on their flight to Tatura in the "Wattle Bird." On the right, the Prime Minister and Mrs. Bruce emplaning in the "Lyre Bird," for a flight to Adelaide.

services, London to Manchester and Ulster to Lancashire, have died in infancy. Why should such a reflection cause despondency? What does it matter to the British race if there is no air line between London and Manchester, so long as there are most excellent airways in Australia, between Perth and Derby, Charleville and Camooweal, Adelaide and Melbourne? That is the British answer to the aerial boasts of America, Germany, and France. But, unfortunately, some people never think of that answer, because they have not cultivated the habit of thinking Imperially. One must admit that our aircraft designers were slow to cultivate the habit. For too long after the Armistice they continued to produce aircraft suitable mainly for European conditions. But a new spirit is now apparent.

At present there is a division of labour between the British Commonwealth of Nations. The function of Great Britain is design and experiment; that of the Dominions is operation. This remark is not intended as a slight to Imperial Airways, but it accepts the view attributed to the Director of Civil Aviation, that the present cross-Channel services are in the

thought and action were based on leisurely communications, and then distance did not so much matter. But the modern spirit demands speed and cannot do without it. When British communities live a whole hemisphere asunder, no possible increase in the speed of ships can satisfy their needs. Only aircraft can supply what is now essential, and Empire airways we must have, if we are to remain an Empire.

While we wait for the coming technical developments which will make Empire airways a reality, and bring Australia closer to Great Britain than India is today, the best that could be hoped for was that the Dominions themselves should establish efficient internal air lines. Australia, Canada, South Africa, to say nothing of other parts, are each facing on a smaller scale, the problems which confront the Empire as a whole. Each of those Dominions rejoices in wide spaces, great distances, and the need for speeding up communications. In Australia the problem was particularly acute, for there the railways gave least help. Even the modern squatter in the out-back and the "Never-never" has more needs than his grandfather would admit. For one



TWO AERIAL VIEWS FROM AUSTRALIA: On the left, Federal Parliament House, Canberra, in course of construction. On the right, a view of the River Yarra, Melbourne, approaching the Botanical Gardens.

thing, medical science has advanced, and nowadays it is not fair to expect the squatter to live and bring up his family outside the range of reasonable medical help. For another thing, the modern woman, quite reasonably, expects more than would content her grandmother; and unless women will go out into the undeveloped tracts, those tracts will never be settled. The telephone has spread far and wide, and it has done much to ameliorate life. But the telephone cannot actually bring the doctor to the bedside of the patient, or take the patient to hospital, as the aeroplane is constantly doing. Even in lesser matters, the telephone, the cable, and wireless, invaluable as they are, can never quite take the place of letters speedily delivered.

It is a matter of immense satisfaction, and a cause of pride to the whole British race, that Australia has actually

done what might have been expected of her. Australians themselves may sometimes say that she has not done all that she might have done—everyone can say that if they are honest. But Australia has done right well in making a start with airways and in this great movement has given the Empire a lead. In the very near future she intends to do very much more.

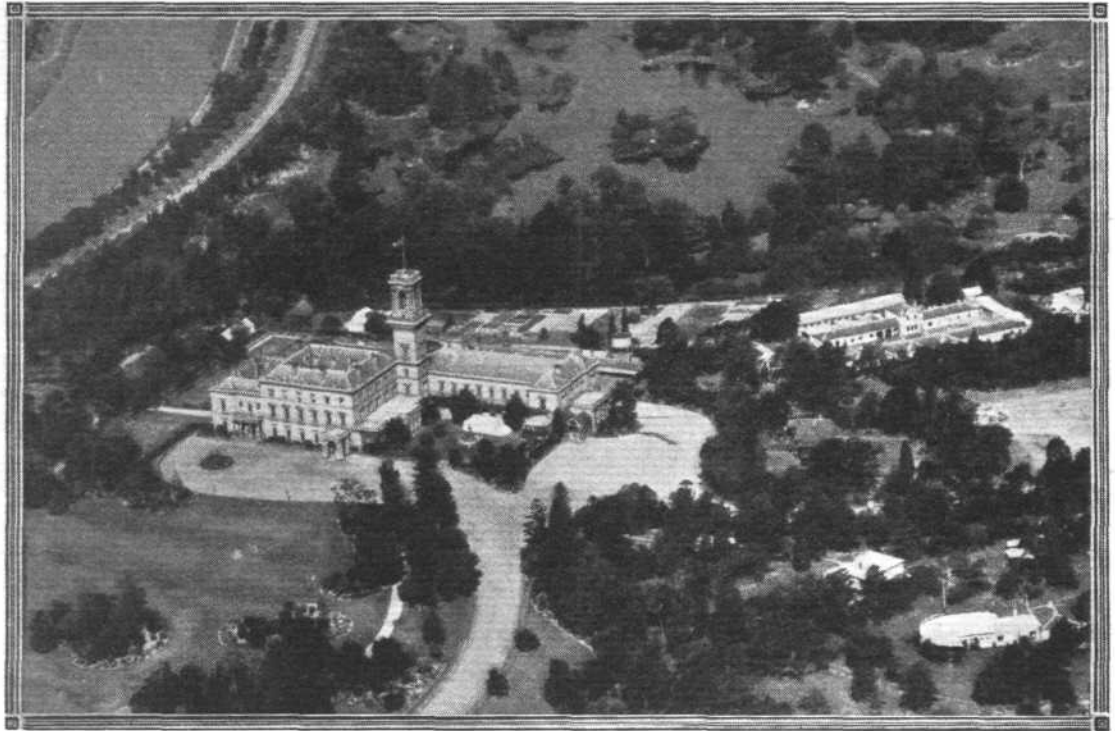
Historical

From very early days Australians became prominent among flying pioneers. In 1892 Lawrence Hargreaves commenced a series of valuable experiments with kites and gliders in Sydney. Capt. Jack Duigan in 1911 built and flew an aeroplane of his own design, fitted with a Green engine. The skeleton is now in the Melbourne Museum. In 1910 Harry Houdini, the "Handcuff King," who was an American,



An aerial view
of Federal Par-
liament House.

Aerial view of
Government
House, Mel-
bourne.



brought a Voisin biplane to Sydney and flew it. Bert Hinkler also made experiments with gliders in his early days.

The war naturally introduced continuity into Australian flying. In 1914, the Australian Government procured two instructors from England, Messrs. H. A. Petre (familiarily known as "Peter the Monk," and now on the Committee of the Royal Aero Club), and Eric Harrison (who was recently Australian liaison officer at the Air Ministry). On August 17, 1914, a course of flying instruction was begun at Point Cook, near Melbourne. Four candidates presented themselves and were duly trained as pilots on a box-kite with a length of gas piping serving as joystick. Their names were T. W. White, G. P. Mertz, R. Williams, and D. T. W. Manwell.

Of these four, Mertz was killed in Iraq, Air Commodore Williams, C.B.E., D.S.O., is Chief of the Air Staff of the Royal Australian Air Force, and White and Manwell survive, with the ranks of Major and Captain respectively. In addition, W. H. Treloar had just returned to Australia after learning to fly in England. In February, 1915, the Government of India enquired if Australia could send an air unit to co-operate in Iraq; so a half-flight, consisting of Petre, White, Mertz and Treloar and some mechanics, was sent (less aircraft), and from that beginning came into being the Royal Australian Air Force—of which more later.

In the years following the Armistice the aerial history of Australia was not extremely different from that of Great Britain. Demobilized pilots returned, each one convinced



Government
House, Circular
Quay, Sidney.



Sydney Harbour
from above: Our
photograph
shows the view
looking west
from Farm Cove.



that the aerial age had arrived, and many of them strongly disinclined, or else unable, to take up non-flying work. But things were rather worse in Australia because at first there was no control. It was not until November, 1920, that an Air Navigation Act was passed. One reason for the delay was that some of the States were loath to surrender their rights over the air above them to the Federal Government. Accordingly, pilots were free to run joy-riding concerns quite unhampered by C. of A. restrictions, or any other restrictions; and a number of unpleasant crashes was the not unnatural result. A number of flying companies were also formed, of which only one (that founded by the Larkin brothers) still survives. The Australian Aero Club, led and inspired by the late Col. Oswald Watt, did useful work in agitating for control, and at last, in 1920, 'salutary control of civil flying was established. Col. H. C. Brinsmead, O.B.E., M.C., was appointed Controller of Civil Aviation.

Some Notable Incidents

The pre-control period, however, saw some stout flying accomplished by Australians. Pride of place must be given to the flight of Sir Ross Smith and Sir Keith Smith, accompanied by Sergts. (afterwards commissioned) W. H. Shiers and J. M. Bennett, from England to Australia in a Vickers

Vimy, with two Rolls Royce Eagle VIII engines. Five machines entered for the prize of £10,000 offered by the Commonwealth Government for the first flight from England to Australia. Among the "also-rans," two names deserve notice, Captain G. C. Matthews, of the "Wallaby," and Capt. G. H. Wilkins, of the "Kangaroo." Matthews has lately formed a company in Victoria, and is said to be hoping to secure a contract for the Melbourne-Tasmania service. We shall surely hear more of Matthews in the future. Of Wilkins we have lately heard a great deal. His recent flight from Alaska to Spitzbergen elicited from Capt. Amundsen the remark that "no flight had been made anywhere at any time which could be at all compared with it."

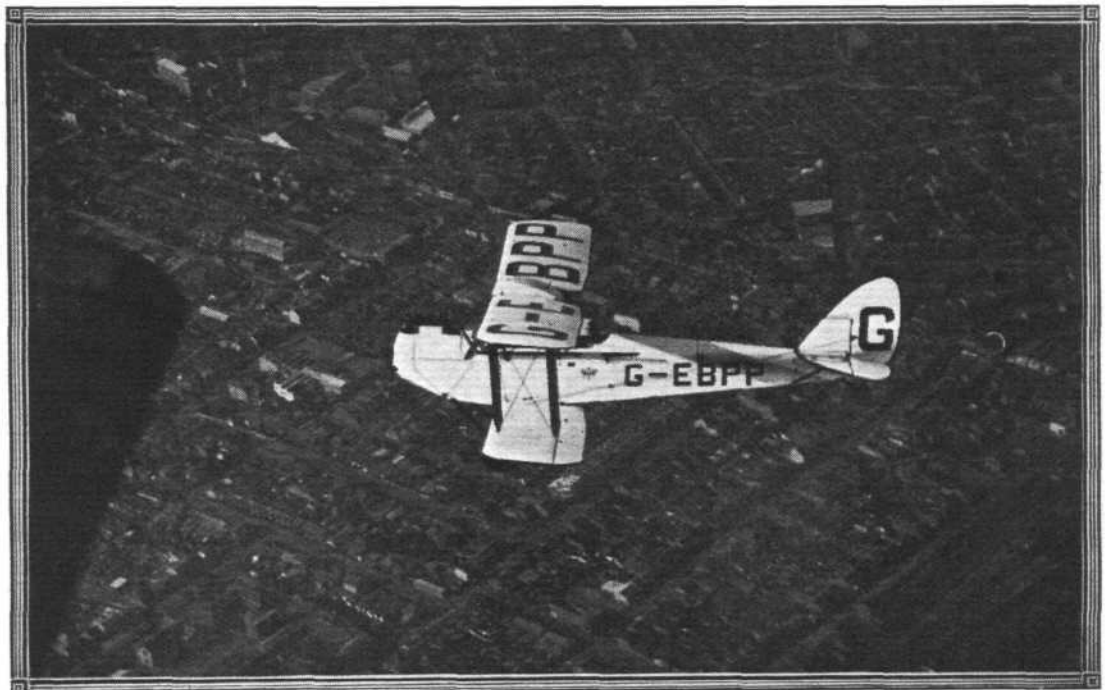
Good work was done in Australia preparing for the arrival of the Vimy. A route with landing grounds was laid out from Darwin to Sydney and Melbourne, and Capt. (now Squadron-Leader) H. N. Wrigley, D.F.C., A.F.C., and Sergt. (now Flight-Lieut.) A. W. Murphy, D.F.C., A.F.C. flew in a very old B.E.2.E from Point Cook to Darwin, 2,500 miles to meet Ross Smith and his party. Wrigley and Murphy were each given the Air Force Cross for that exploit. This B.E.2.E. was the first aeroplane ever seen at Longreach (now the headquarters of Q.A.N.T.A.S.), and before its arrival, the Shire Clerk, with a laudable desire to promote air-mindedness distributed a handbill, which said that



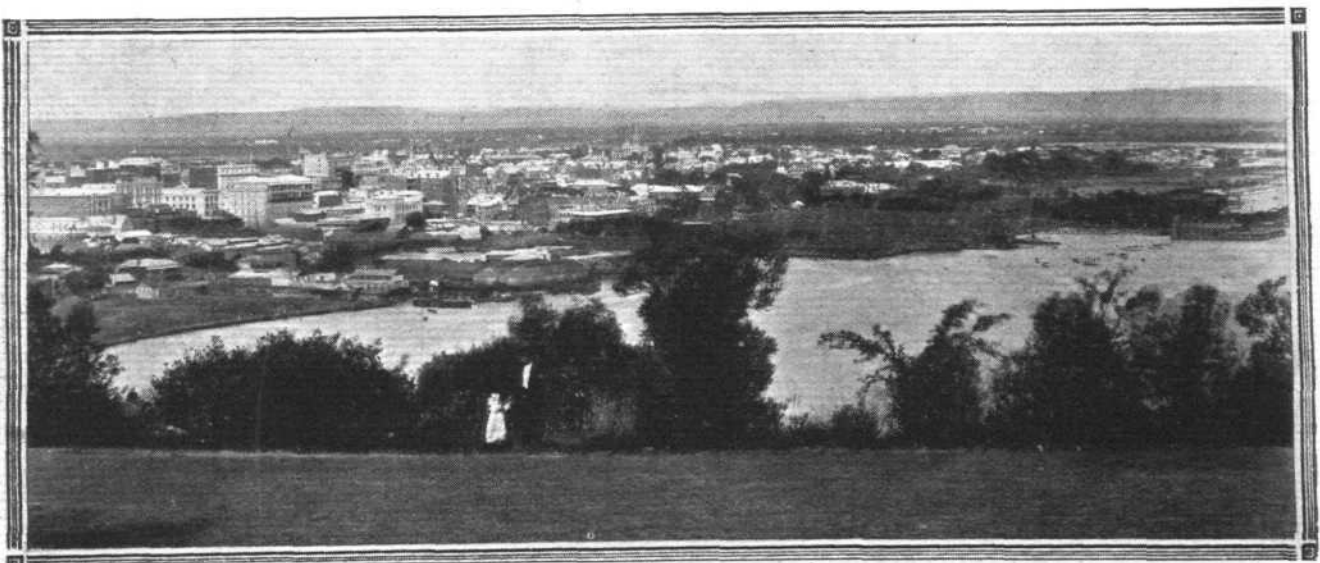
Aerial view of
Sale Yards, New-
market, and
Aerodrome, Mel-
bourne.



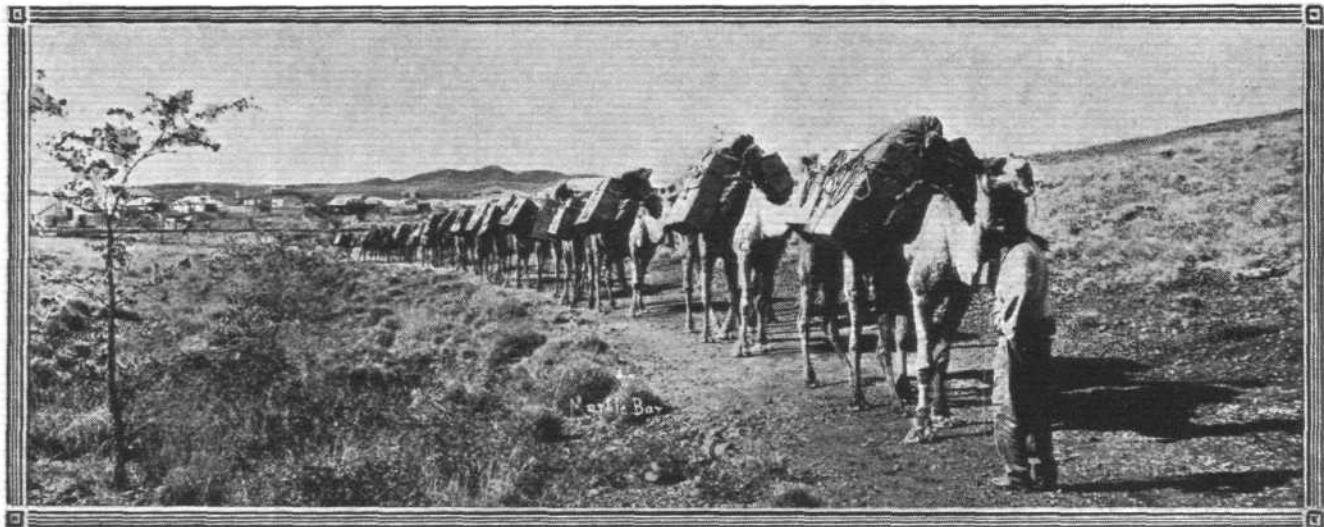
Kalgoorlie, West
Australia.



Flying over
Sydney: This
photograph
shows Maj. H.
de Havilland,
D.S.O., flying a
"Cirrus- Moth"
during his visit
last year.



DISTANT HORIZONS : View of Perth, West Australia.



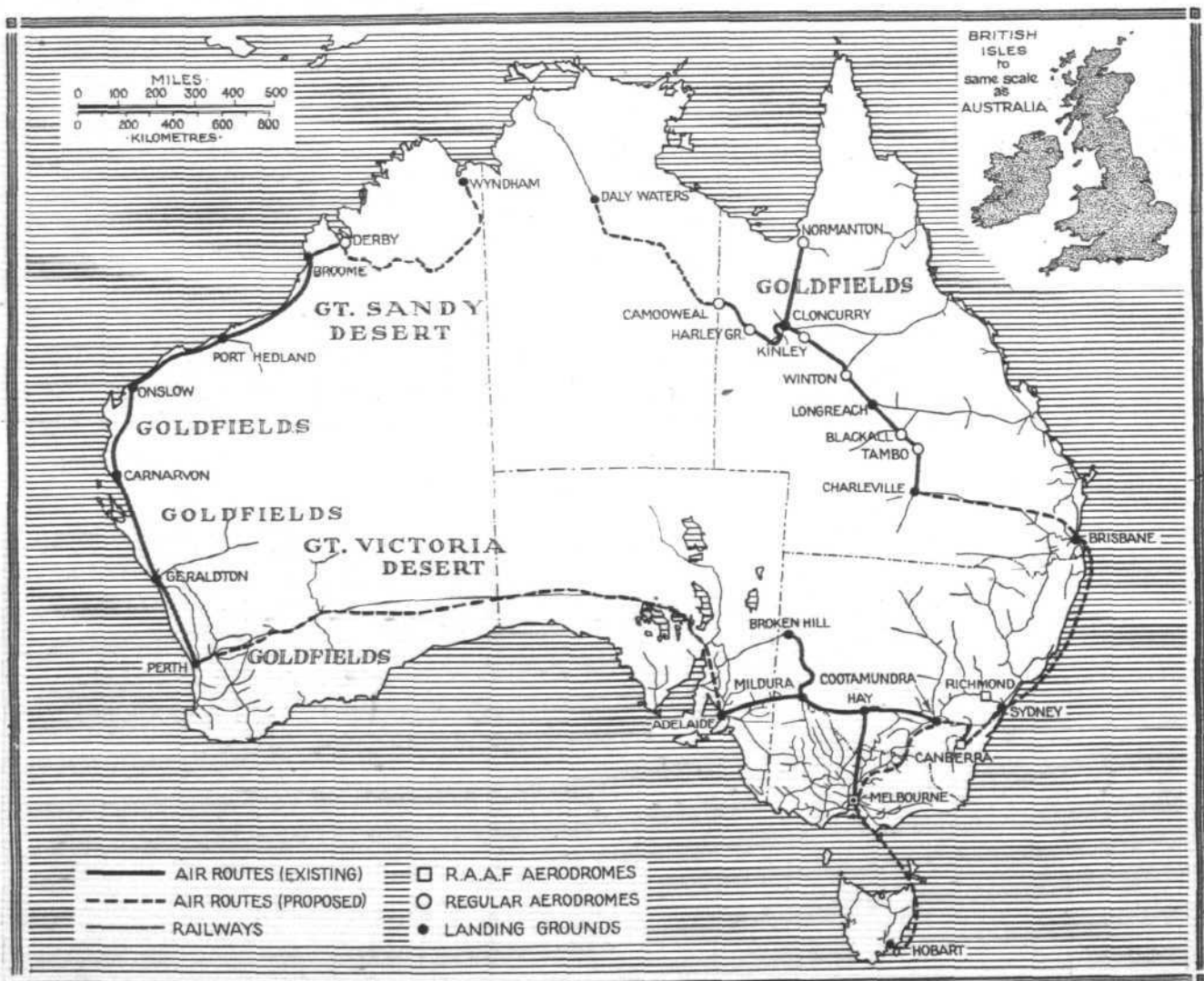
SHIPS OF THE DESERT : A Camel Train in West Australia.

"The Bellman will announce the date and hour, as near as possible, of the arrival of the aeroplane from Melbourne. . . . It is also proposed to ring the FIRE BELL one hour prior to the arrival."

In 1920, Wing-Commander W. H. Anderson, D.F.C., now Australian Liaison Officer in London, and Capt. Stutt, each accompanied by a mechanic, set out in two D.H.9A's to search for a ship that was missing in the Bass Strait. Stutt's

machine disappeared and was never found. Anderson for two weeks carried out a daring but vain search for the ship and for his companion at great risk to himself.

Meantime Hinkler had made his great flight from Croydon to Turin and then shipped his Avro Baby out to Australia. In 1921, he flew non-stop from Sydney to his home at Bundaberg, 750 miles in 8 hrs. 40 mins., This historic Baby, with its still more historic 35 h.p. Green engine, was sold in



THE AIR ROUTES OF AUSTRALIA: The great distances and relative scarcity of railways, with consequent advantages for establishment of air routes, are well brought out.



A distant View of
Brisbane.

Australia, and is now the property of Mr. F. Fitzalan, of Melbourne. It now bears the registration mark G-AUCQ.

THE AIRWAYS. (West Australia Airways, Ltd.)

Not all the joy-riders in the uncontrolled period crashed their passengers. In reading the records of that time, one constantly comes across the name of Major Norman Brearley, D.S.O., M.C., A.F.C., as doing sound work.

The F.A.I. has recently instituted the practice of nominating a champion pilot and a champion "pilotesse." If there were some similar honour available for organisers of commercial air transport, there is no man in the world with a higher claim to it than Norman Brearley. He has organised the longest airway in the world—one of 1,467 miles—over country once believed to be most unsuitable for an airway. He has operated it for six years with absolute safety, reliability, and regularity. He has achieved economy, declared dividends, and had his subsidy reduced. And, he has made his airway a necessity to the people of the tracts which it serves. Districts beyond his range have clamoured for the line to be extended to them.

Many air services can show a fine record of safety and reliability. But few can prove such economical operation as West Australian Airways, and only one other (also in Australia) can claim to do such service to the public.

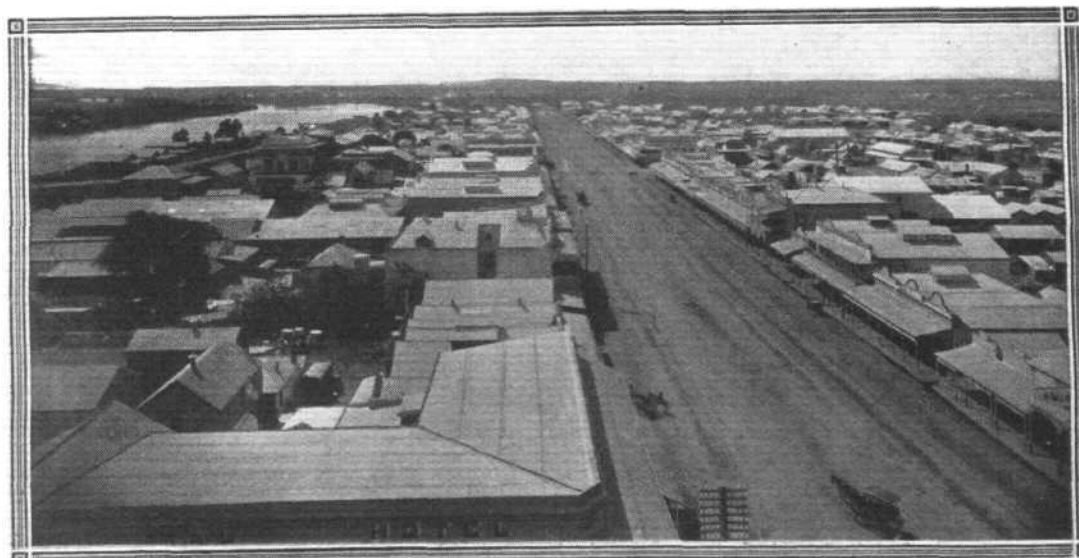
In 1921, the Federal Government decided on an air service between Geraldton and Derby, and called for tenders. One Australian authority remarked to the present writer that he did not think much of the route, and regarded the service

as rather like a military railway, worth the expenditure of Government's money, but not commercially valuable. Had the service been operated without great efficiency and determination, it would possibly have proved a commercial failure. But Brearley's conduct of the line resulted in its steadily winning recognition and appreciation by the people along the airway.

Western Australia is a unique State. The populous parts of South Australia, Victoria, New South Wales and Queensland, are contiguous, forming a belt of population from Adelaide round the south-eastern coast up to Brisbane and beyond. Great deserts on the shores of the Great Australian Bight separate this community from the populous tract in the south-west which has Perth as its capital. A railway runs north from Perth as far as Geraldton and there branches inland. Thence for the 2,000 miles or so northward and north-eastward up to Darwin the vast sheep-grazing country is innocent of railways, nor are there over many roads. The normal communications with Perth are by means of slow and irregular (nominally monthly) coasting steamers. Motor cars find their way round about the stations; but inland the ordinary means of transport is the camel.

The contract was granted to Western Australian Airways, Ltd. (recently re-formed as West Australia Airways, Ltd.) with a subsidy on the basis of 4s. a mile flown. It provided for one flight weekly in each direction between Geraldton and Derby. The regular ports of call are Carnarvon, Onslow, Roebourne, Port Hedland, and Broome. In January, 1924, the route was extended southwards to Perth, as it was found

The Home of
"The Great Little
Man": Bundaberg
has become famous as "Bert"
Hinkler's birth-
place.



The Base for the
 air survey of the
 Great Barrier
 Reef: Bowen,
 Queensland.



that for through journeys the railway did not compensate for the absence of the air service.

Operations commenced in December, 1921, with a fleet of six Bristol Tourers with Puma engines. Right good service did those Bristol machines give. They have now passed out of the possession of the Airways, but some of them are still busily flying in other hands. The increased traffic demanded larger aeroplanes, and D.H. 50's are now used. Brearley engaged pilots and had them all put through a refresher course. But all did not apparently profit by it, for on the inaugural flight one of them stalled his machine with fatal results. It was a catastrophe, but by no means an omen. Those who may have thought so did not know Brearley. He has never had another accident on any regular mail flight.

It is hard for people in Great Britain—or even for people in Melbourne—to picture what this airway has meant to the north-west of Australia. In the old days a business man in Perth would sometimes post letters on the same day to London and to a station manager up in the north; and get a reply from London first. The isolation of life on those sheep stations is very difficult to picture. One settler once remarked "Although the aeroplane does not often come down, the fact of its flying overhead is like a visit of a friend twice a week; we always look out for it." But a signal will bring the machine down and a doctor can be summoned or other urgent need supplied.

The stations on the route are not by any means insignificant. Broome, on the edge of the tropics, is a great centre of the pearling industry, and the business is said to be worth about half a million a year. The divers are mostly Japanese, and of the total population of Broome (about 4,000), only some 500 are Europeans.

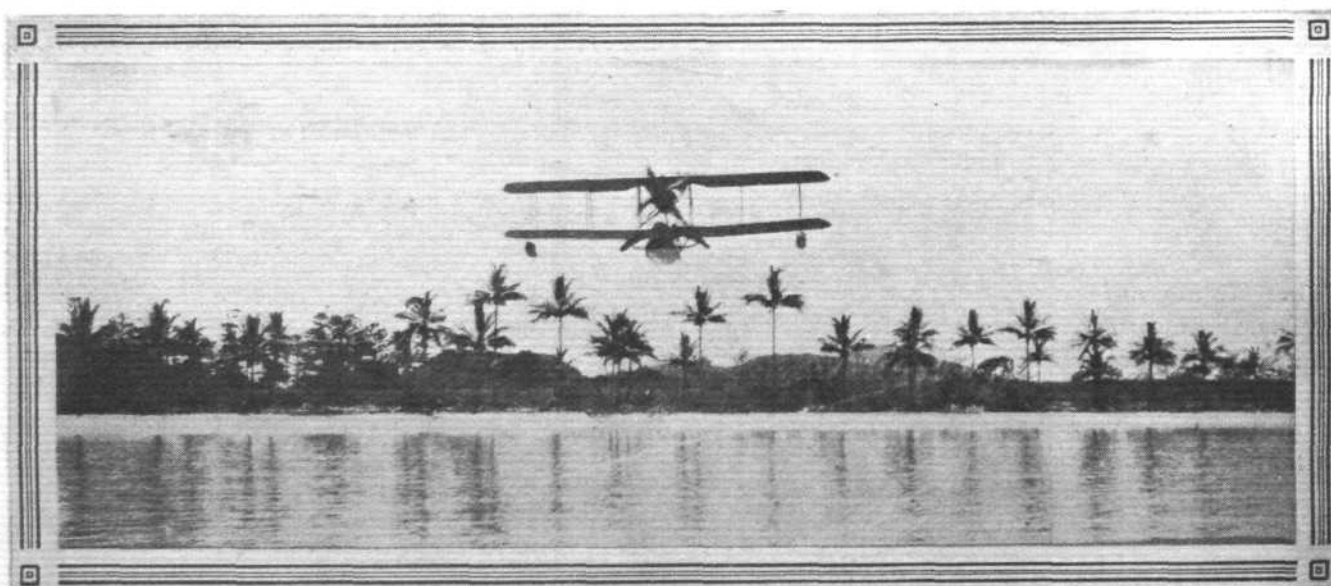
It has often been proposed to extend this service at its

northern end from Derby to Wyndham via Hall's Creek. This is to be done in the near future, but at first the scheme was rejected because that route would cross a range of hills and there was no money to provide landing grounds. The inhabitants of Wyndham district petitioned the Government for the extension, and in support of their claims mentioned a sad case. The wife of a large station owner in the district was ill, and a man was sent on horseback to fetch a doctor. Eleven days later the doctor arrived on horseback—too late. Had an aeroplane been available the lady and her baby might both have been saved.

Perhaps the best way of estimating the utility of this airway and appreciating its steadily growing popularity is by examination of the records. One may picture for oneself that when the airway was started, the people in a land so badly served had become accustomed to solitude and lack of communications. They would naturally lose the habit of travelling and of writing letters. Then, when the airway was started some individuals would perhaps write letters and send them by aeroplane, as a kind of humorous experiment, much as a bank holiday-maker tries his luck with the fortune-teller.

The invariable prompt delivery of the letter and the reply would come as an eye-opener, and so it would gradually dawn on the squatters that correspondence was no longer a hopelessly impracticable thing. Passenger traffic would grow in the same way.

The lesson is made clearer by the admirable habit of all the Australian airways of recording, not the weight of mail carried, but the actual number of letters. For the first six months of 1921-22, however, the records were not kept in detail. The results are lumped together as 10,000 letters for the six months—about one letter for every 10 miles flown. But in June, 1922, the miles flown were 9,610 and the letters



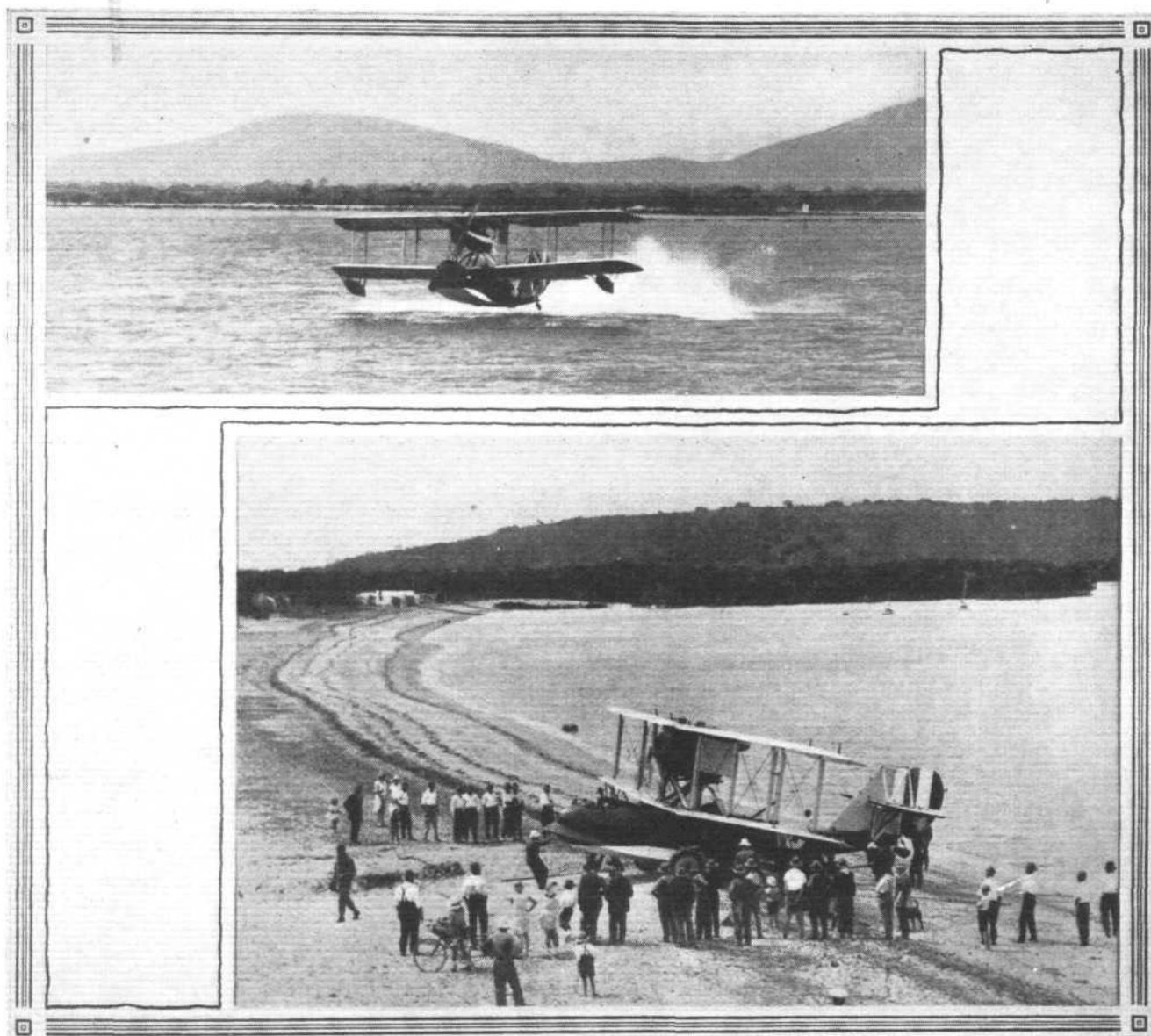
SURVEYING THE GREAT BARRIER REEF: A composite photograph showing one of the Supermarine-Napier "Seagulls" alighting at Kennedy Sound.

carried were 5,730, which shows a rapidly growing appreciation of the convenience. Next month there were 10,570 letters for 11,430 miles. Thereafter the worst mail month was February, 1923, when there were only 6,900 letters. From the June of that year, however, onward, the number of letters carried has never fallen below 10,000 per mensem, and now it fluctuates between 19,000 and 24,000. Considering how thinly populated the northern parts of Western Australia are (the average is about four white persons to 100 sq. miles), these figures show that a very active amount of correspondence has grown up—thanks entirely to the airway.

The passenger traffic, though slower in developing, shows the same characteristics of steady, healthy growth. In June, 1922, there were 23 paying passengers, but as there

De Havilland Aircraft Co., Ltd., to manufacture "50's" in its workshops in Perth.

The efficiency of the service has surprised everybody, and if it has not quite reached the figure of 100 per cent. right through its history, it has undoubtedly come nearer to it than any other air service in the world. On the whole, the climate of Australia is almost ideal for flying; but there are occasions when the pilots have to struggle against difficulties. One reads of atmospheric disturbances known locally as "cock eye bobs," "twisters" and "willy-willies," when aeroplanes suddenly climb hundreds of feet in a few seconds, and then lose the same amount of height in one terrific bump. One knows that minor crashes and forced landings have occurred on the West Australian airway; but so excellent



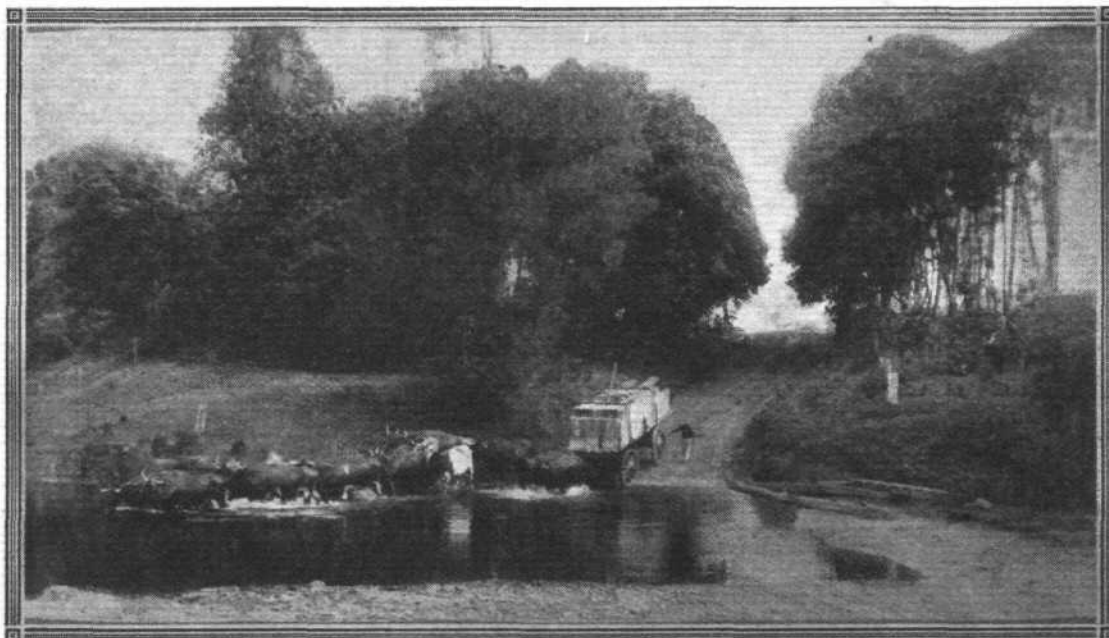
SURVEYING THE GREAT BARRIER REEF: Supermarine-Napier "Seagulls" were used very successfully for this work. Our photographs show one of the "Seagulls" alighting off Bowen, and, below, taxiing up the beach on its wheel undercarriage, which proved very useful at low tide.

were only eight to ten subsidized flights in a month, and the Bristol tourer could only carry two passengers, this was not really a discreditable figure. Of course, all the passengers did not travel the whole length of the route. In October, 1922, we notice a jump to 38 passengers. There were, naturally, fluctuations, but the general tendency was upward. June, 1923, showed 42, September of the same year, 51 and November 72. It was not until August, 1925, that a three-figure return was recorded; but from the middle of 1926 up to date it has been the exception for fewer than 100 passengers to use the airway each month.

As the traffic grew, a number of D.H.50's (Puma engines) were added to the fleet, and were put into service on the southern sections, while the Tourers continued to work up in the north. Only three Tourers now remain in possession of the firm. The company now holds a licence from the

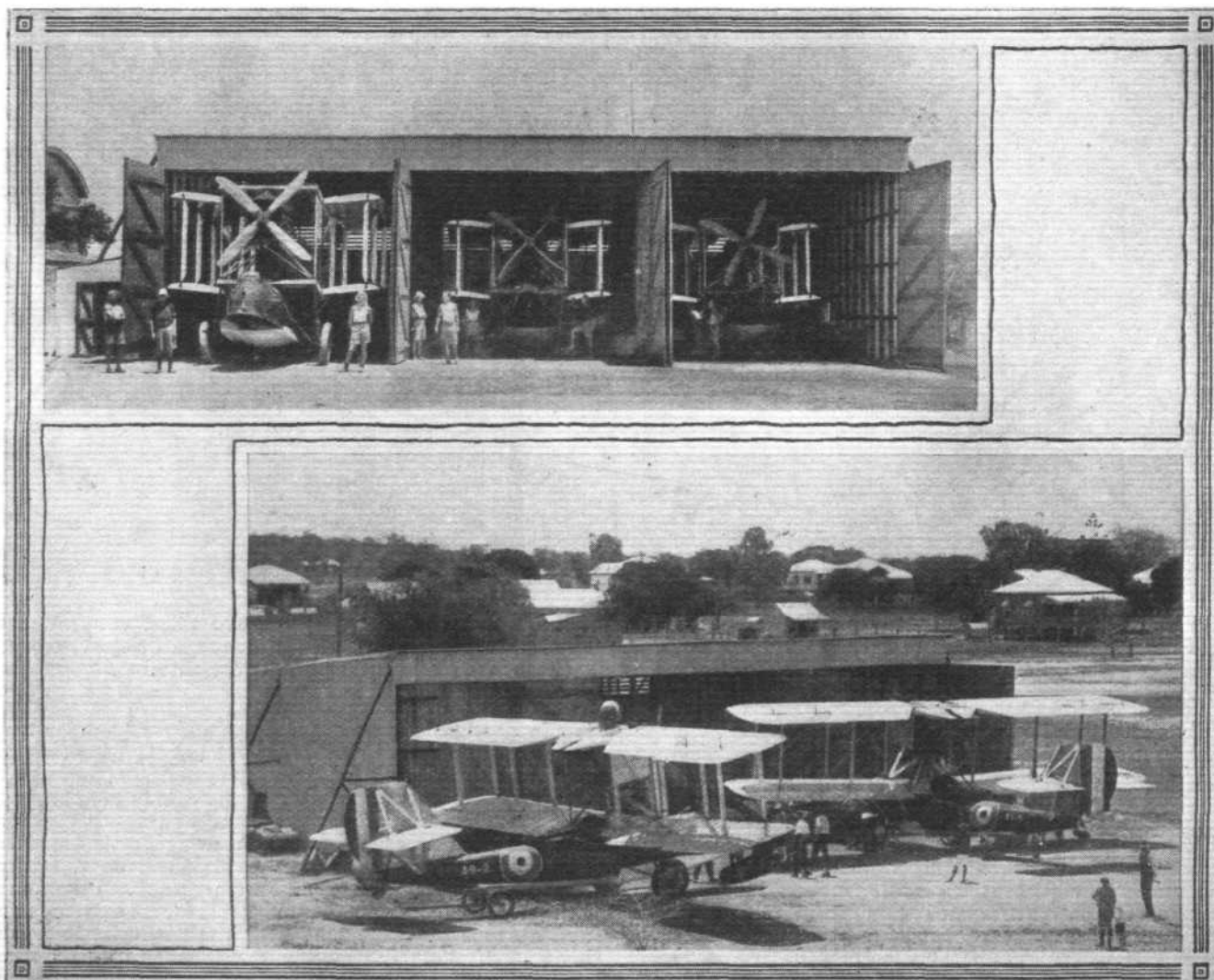
is the organisation that the mails very seldom arrive at a terminus much behind schedule time. Stranded pilots are permitted to tap the telephone line and summon assistance from the nearest aerodrome, and invariably help is promptly sent. Business men who have studied the organisation say that it is a masterpiece. Every contingency is provided for. Maj. Brearley has everything at his finger ends. Calm and unruffled, he deals with every emergency. Unassuming, a delightful companion, and remarkable for his extreme modesty and absence of "side," he wins the enthusiastic loyalty of his staff of pilots and mechanics. Thanks to good organisation, the staff is moderate in numbers (some 30 all told), yet efficient for all purposes. In all ways economy without parsimony is a principle. Yet, genial as he is, no considerations of sentiment are allowed to counterbalance the interests and fair name of the airway.

An Australian Amphibian: Ox team fording a river in Queensland.

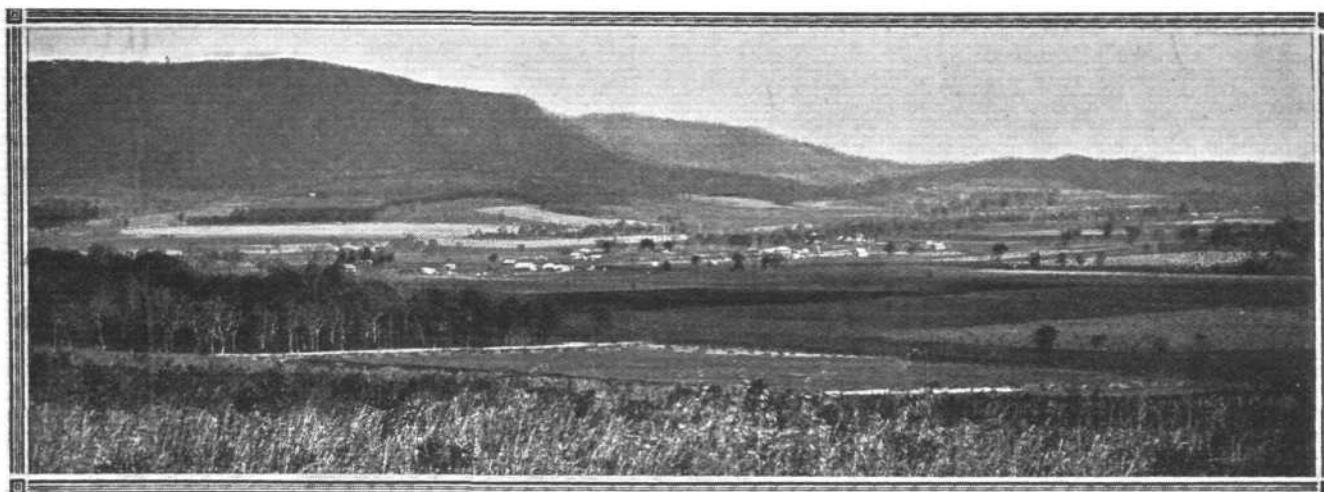


West Australian Airways was, it is believed, the first air transport concern in the world to declare a dividend, which amounted to 10 per cent. Consequently, when its contract was renewed by the Government in December, 1926, the subsidy was reduced from 4s. to 3s. 4d. per mile for the first year, and for the second and third years the amount was to be settled after investigation of the accounts. At first sight, it seems

hard luck thus to penalise success, but after all, the great object is for aerial transport to become self-supporting and to dispense with Government aid. This line is showing promise of attaining that goal. Incidentally, the subsidy never was quite 4s. a mile, for the route was first reckoned as 1,442 miles from Perth to Derby, but a recent more accurate survey has shown it to be 1,467 miles. This difference would mount up



A SEAGULL'S NEST: The three Supermarine "Seagulls" housed in their hangar at Bowen. Below, two of them are seen on the tarmac.



WIDE VISTAS : Cultivated land in Emu Vale, Queensland.

considerably in the course of five years with 104 contract flights per annum. Likewise the returns of machine miles flown would be affected. Up to December, 1927, the totals given were:—Subsidised flights, 849,998 miles; unsubsidised "taxi" flights, 63,975 miles; total, 913,973 miles. By now, West Australian Airways must be just on achieving its millionth mile, if it has not already passed that figure. Early in 1927, the increase of passenger traffic induced Major Brearley to duplicate his service between Perth and Carnarvon, without subsidy. After a short experience, however, it was found advisable to reduce the extra service to the route Geraldton-Carnarvon. It appears that passengers who only wanted to travel a comparatively short distance would use the railway as far as it would serve them, that is, up to Geraldton, and would emplane there. Through-passengers on long trips, however, preferred to start by aeroplane from Perth and fly right through.

In addition to the activities mentioned above, the company, a year ago, started a flying school at Maylands aerodrome, four miles from Perth, which by the end of January last had turned out 18 qualified pilots. The machines used by the school are two X Moths with Cirrus engines.

A branch company, with the title of "Air Surveys, Ltd.," was also formed last year, with the object of undertaking aerial photography and surveying in West Australia. A Vickers' Eagle Camera was ordered from England, and it was proposed to import aeroplanes specially designed for air survey work. The necessary capital was readily subscribed.

The present fleet of the company consists of one Avro 504 J, three Bristol tourers, one D.H.50, six D.H. 50As, and two X Moths.

The head offices of the Airways, of the flying school, and of the air survey company are at 35, A.M.P. Buildings, Perth, W.A. The aerodrome is at Maylands, some four miles out.

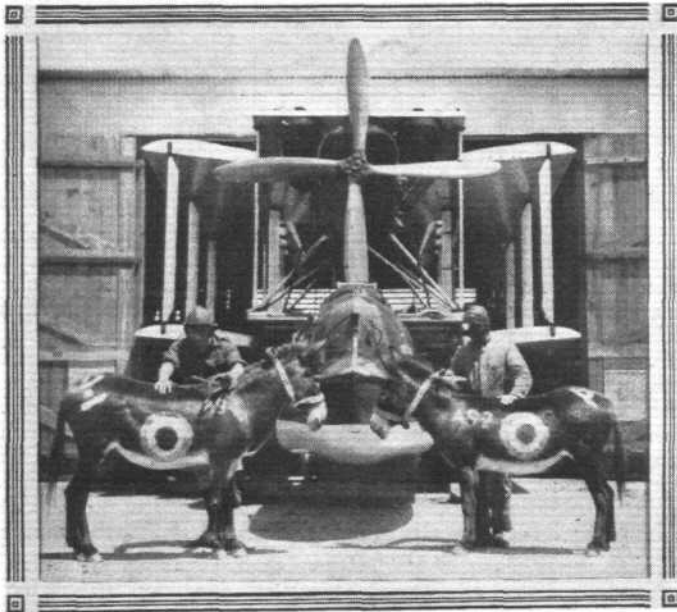


A WESTLAND "CIRRUS-WIDGEON III" IN AUSTRALIA: Three views taken on the occasion of the christening ceremony. This machine made the fastest-time in the Brisbane Aerial Derby, and also among the civil machines in the New South Wales Derby.

**Queensland and Northern Territory Aerial Services,
Limited
(Q.A.N.T.A.S.)**

When one has tried to exhaust all one's powers of eulogy on the thoroughly deserving subject of West Australian Airways, one is left wondering what to say about "Qantas." The latter is inferior to the former in age, for it started operations in November, 1922, and in length of subsidised route, which only totals 1,040 miles. It would be difficult to point to any other respect in which it is less deserving of praise.

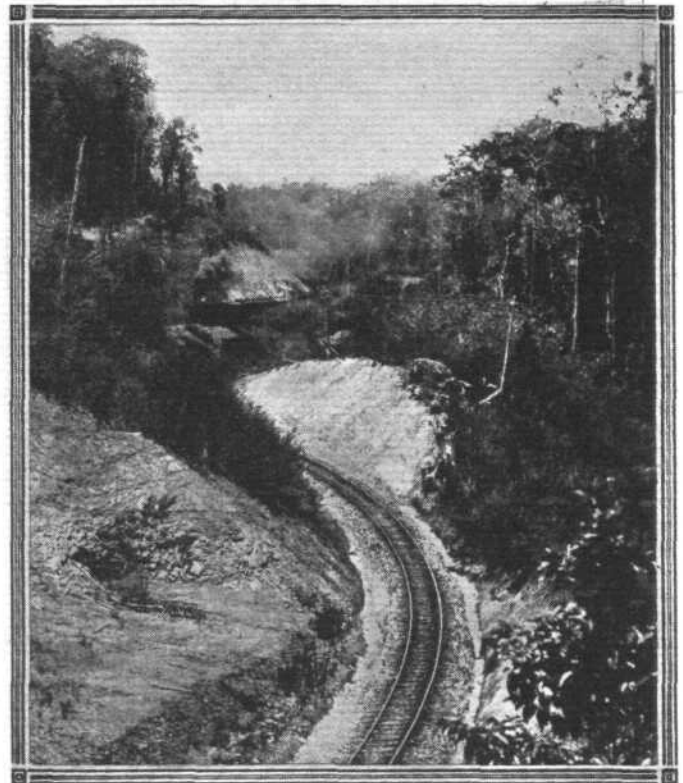
Nevertheless, circumstances in Queensland and West Australia are not identical, and there are various respects in



Auxiliaries to "Seagulls" A9-1 and 2.

which the history of these two great airways differ from each other. Qantas had to fight a hard battle in its early days, and perhaps in some ways it might be called over-ambitious for a young company. It has, however, long ago left those early difficulties behind.

On the other hand, no one who glances at the original Qantas route could say that it was unsuitable for aircraft. It might be described as one of the brainiest air routes in the world. One must ask readers to study the map. The main Queensland railway follows the east-coast northwards as far as Cairns. At the harbour towns of Brisbane, Rock-

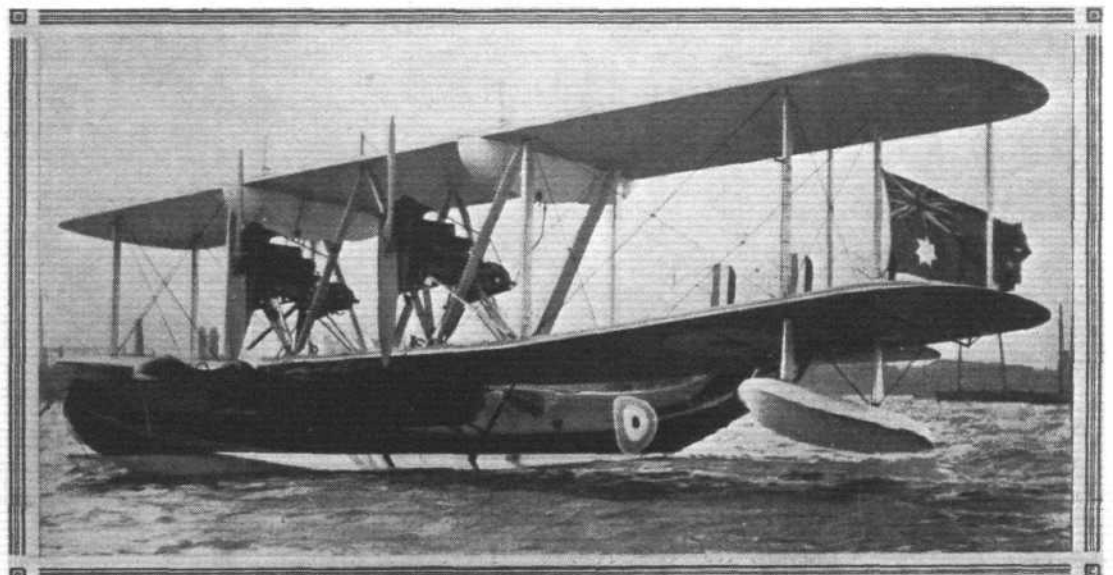


A scene on the North Coast Railway. Cutting on the Blackwall Ranges, South Queensland.

hampton, and Townsville, feeder lines branch off westward into the rich grazing country of western Queensland, and come to dead ends without intercommunication. The railways are narrow gauge, and in the sub-tropical climate of Queensland passengers do not find travel a sheer joy. The original Qantas route connected up Charleville, Blackall, Longreach, Winton, and Cloncurry, each of which towns is situated on a separate railway line. Longreach and Winton are railheads.

In the old days a man, say a wool-buyer from Sydney, who wanted to travel from Charleville to Cloncurry, had to train to Brisbane, then train up the coast to Townsville, and then come inland again in a third train. The distance by train, approximately, is 1,300 miles, and it is improbable that an average speed of 40 m.p.h. is maintained. By air the distance from Charleville to Cloncurry is 577 miles and it is covered by air in 9½ hrs. The air traveller, therefore, does not only save time, he must certainly save money, even though

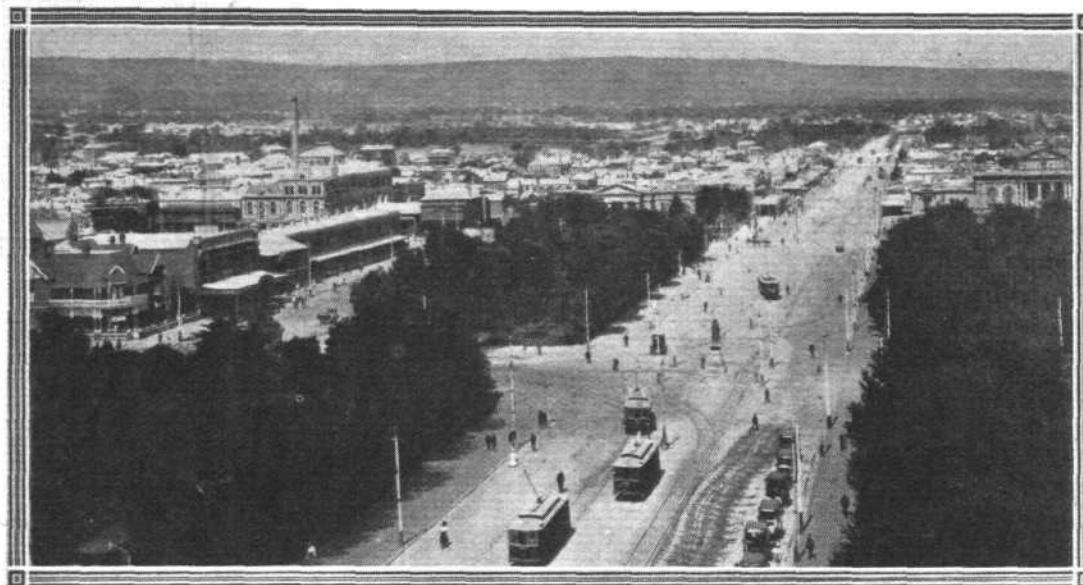
Under the
Australian Flag:
A Supermarine
"Southampton"
with Napier
"Lion" engines
recently delivered
to the R.A.A.F.
This machine is
able to fly with
one of its two
engines stopped.



the fares on the airway range from 7*d.* to 9*d.* a mile. As for comfort, well, the shade temperatures on the ground sometimes reach 115°, and the present writer, as an old Anglo-Indian, has a vivid recollection of what torment that means in a railway carriage on a narrow-gauge line. Up in the cabins of

Queenslanders, Messrs. Hudson Fysh, Paul McGinnis, A. N. Templeton, and F. McMaster met together in Longreach and decided to form a flying company.

Hudson Fysh became the general manager, and he has always been the moving spirit of the company. At a later



The birthplace of two famous brothers; Sir Keith Smith and the late Sir Ross Smith had their home in Adelaide, South Australia.

the D.H.50's a comparatively chilly 70° to 75° would be thoroughly enjoyable.

The original Qantas route was: Charleville, Tambo, Blackall, Longreach, Winton, Mackinlay, Cloncurry. In February, 1925, the subsidized route was extended from Cloncurry to Camooweal (248 miles) with a landing at Mount Isa. On July 1, 1927, a subsidised branch from Cloncurry to Normanton on the Gulf of Carpentaria (215 miles) was opened.

The Qantas timetable for the winter months, May to September, is as follows:—

NORTHERN TRIP.				
Thursdays	..	Charleville	.. dep.	7.15 a.m.
		Cloncurry	.. arr.	4.50 p.m.
Fridays	..	Cloncurry	.. dep.	8.0 a.m.
		Camooweal	.. arr.	11.35 a.m.
SOUTHERN TRIP.				
Saturdays	..	Camooweal	.. dep.	8.0 a.m.
		Cloncurry	.. arr.	11.35 a.m.
Sundays	..	Cloncurry	.. dep.	8.0 a.m.
		Longreach	.. arr.	12.35 p.m.
Mondays	..	Longreach	.. dep.	7.15 a.m.
		Charleville	.. arr.	11.15 a.m.

The summer service is approximately 1½ hrs. earlier.
The origin of Oantas is to be found in 1920, when four

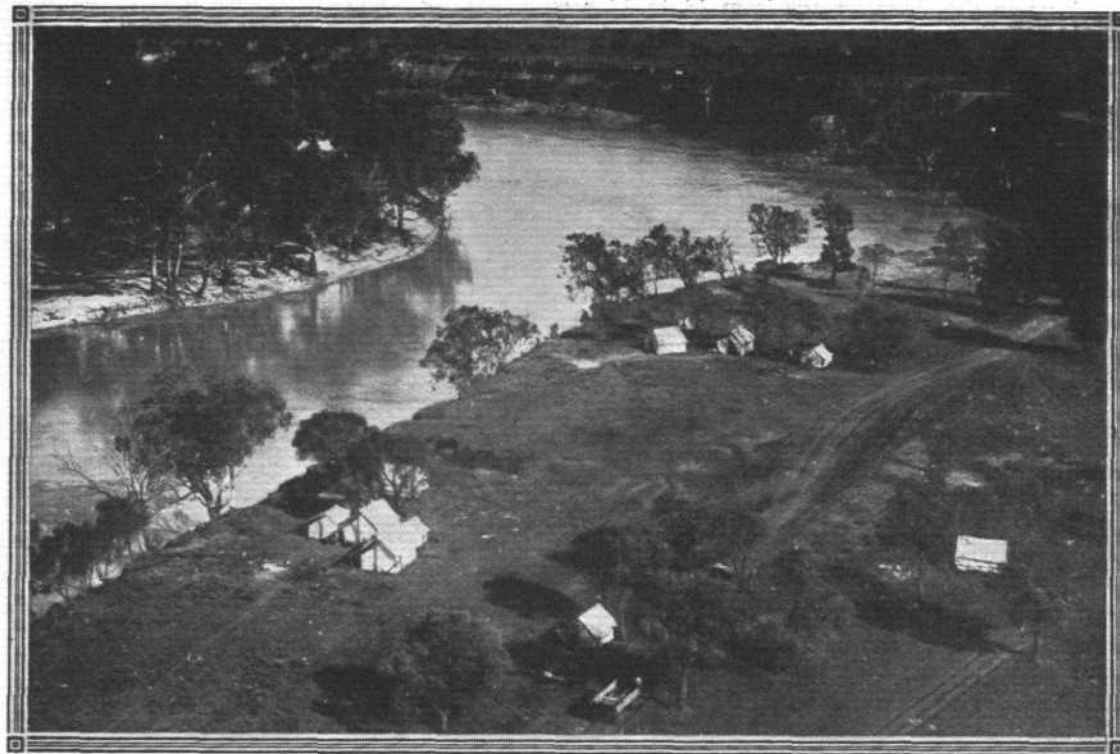
date Dr. F. A. Hope-Michod of Longreach became the chairman. The doctor has used the Qantas aeroplanes on innumerable occasions to take him out to urgent cases, and has contributed largely to the proud boast that in Australia aerial transport has saved far more lives than have ever been lost there in air crashes. For a considerable time the company operated merely as an air-taxi concern, and in fact that side of its business has always been very prominent. The original fleet consisted of one D.H.4 with Eagle engine, one Avro 504 with Sunbeam Dyak, one Avro triplane with 160 h.p. Beardmore, and two Armstrong-Whitworths with 160 Beardmores. Air taxi work kept the company busy for two years, and then it was granted the contract for the Charleville-Cloncurry mail service.

The opening flight was made on November 2, 1922, with an Armstrong-Whitworth which flew from Charleville to Longreach, where the company has its headquarters. Next day the flight was continued to Cloncurry, and the first passenger carried was a settler aged 86, named Alexander Kennedy. In 1870 he had travelled from Rockhampton to Cloncurry by packhorse and bullock waggon, and the trip took him eight months. He thoroughly enjoyed his flight. Every year since then he has flown from Longreach to Cloncurry and back to visit old friends, and he has written to the company: "I must say that for safety, comfort, and utility the service is head and shoulders above all other means of transit, and I have had over 60 years of experience in Queensland."



Oodnadatta, South Australia

On Murray River, Victoria:
 Camp at Pump-
 ing Station, Red
 Cliffs Irrigation
 Area, near
 Mildura.



The lack of suitable aircraft hampered Qantas' development in the early days; but they nobly kept up the regularity of their service. A Vickers Vulcan was tested on the route, but did not prove suitable to tropical conditions. Perhaps this was just as well for Qantas, as traffic in the early days hardly justified the use of such a large machine. Some D.H.9's with Pumas satisfactorily filled the gap until the production of the D.H.50 met the current needs of the Australian airways. Qantas now builds its own D.H.50's at Longreach, under licence from the De Havilland Aircraft Co. Ltd. Three, known as Iris, Pegasus, and Perseus, are now in service. Quite recently the firm has decided to supplant the Puma engines with Bristol Jupiters, and two D.H.50J's are now being erected at Longreach. Radiators are a nuisance in hot climates and the steady development of Qantas' business justifies the use of greater power. The total fleet consists of four D.H.50A's one D.H.9.C, two D.H.50J's, and five Moths with Cirrus II engines.

The growth of the traffic on Qantas had much the same characteristics as the growth of traffic in West Australia. But the Queensland squatters were easier converts. The existence of branch railway lines proves that the rich grazing districts had attracted the attention of transport authorities; and they also imply that the people were accustomed to the idea of communications, and were more than ready for an

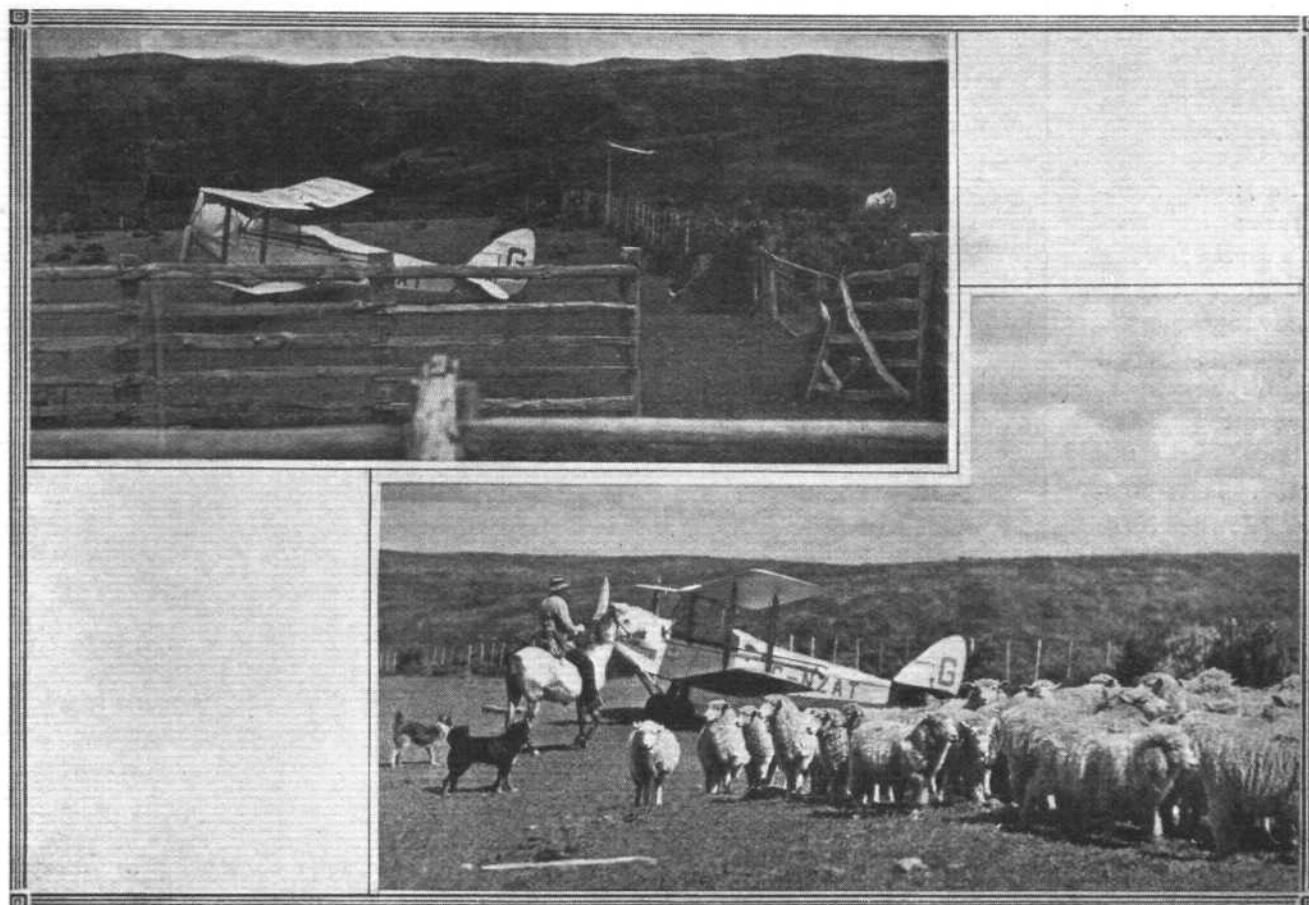
improvement. This, at least, is true of the country as far as Cloncurry. The extensions to Camooweal and Normanton took the air line out into land which had no modern communication with the civilisation of the large towns. At the same time the line to Normanton brought benefits not only to Normanton, but also to Cloncurry. The good folk of Cloncurry for the first time were able to enjoy the great luxury of fresh sea fish from the Gulf of Carpentaria, and they appreciate that boon very highly indeed. Previously the diet in Cloncurry cannot have been of a very varied character. One imagines that it must have consisted chiefly of mutton.

In November, 1922, Qantas flew 4,905 miles, and carried 1,360 letters and 31 passengers. In July, 1927, it flew 10,189 miles and carried 4,038 letters and 101 passengers. That is to say, it has caught up West Australian Airways in the matter of passengers, but not in mails. In the latter month it also carried 2,920 lbs. of freight. Its total record up to the end of 1927 was:—

	Subsidised Services	Unsubsidised Services
Machine miles	404,288	66,899
Passenger miles	431,154	No record
Freight	71,656 lbs.	101,052 lbs.
Letters	97,067	No record



Echuca, Victoria.



A DE HAVILLAND "CIRRUS-MOTH" IN NEW SURROUNDINGS: A typical sheep run in New Zealand.

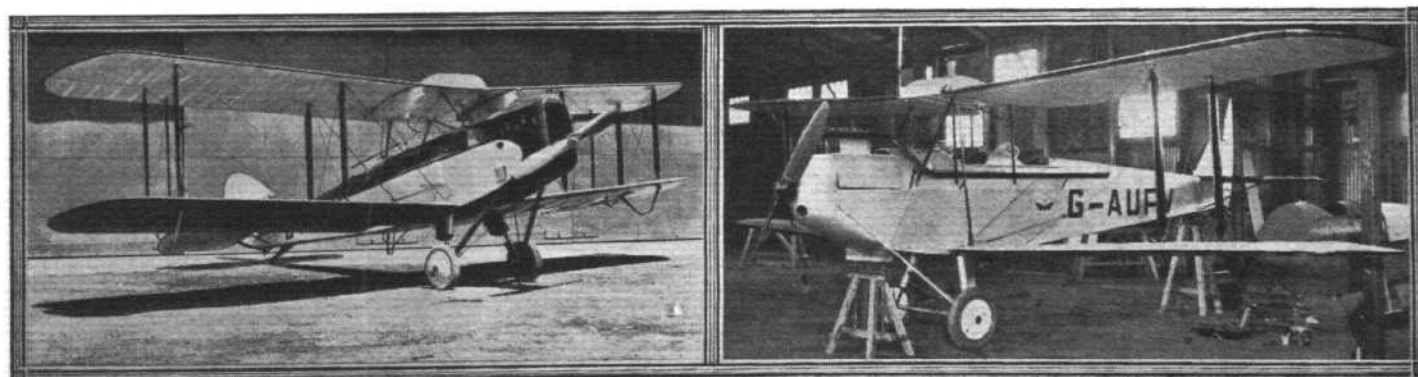
The passenger miles on the taxi services must have been very numerous, as the number of flights amount to 605, and presumably this figure does not cover the period before November, 1922.

All Western Queensland enterprises are dependent on the wool industry, and the country is subject to both drought and flood. The year 1927 was the fifth year of a devastating drought. Welcome and sufficient rain began to fall in December. But in November, when the editor of our Melbourne contemporary, *AIRCRAFT*, visited Longreach, he found children of five who had never tasted cows' milk and never seen a flower or a blade of grass. He records that he did not accept the pathetic story of meeting five-year-old frogs which had never learnt to swim.

Naturally this disaster meant a falling-off in the number of passengers on the regular mail route. But all through that depressing time the figures for air taxi trips, freights, and mails continued on the up grade.

Floods always bring extra work to the Qantas taxi service.

People get hung up by swollen rivers when in a hurry to get somewhere, and the only thing to do is to telephone for an aeroplane. Station managers want to see how their flocks are getting on, and an aeroplane is about the only—to say nothing of the quickest—means of finding out. On occasions a flock is found marooned on rising ground, from which it has eaten off all the grass. Then the aeroplane brings up bags of fodder, and the flock is saved. On one recent occasion a party of clever car thieves stole a car from Camooweal. They disguised the car, and showed that they had foreseen almost every contingency. Black trackers could only indicate the road by which the car had left the town, and it had got away with 15 hours' start. The only thing which the thieves had not provided against was a Qantas aeroplane. While the police were at their wits' end, the weekly machine arrived. The police were given a lift in it, flew to a station on the known road ahead of where the thieves were likely to be, took another car, and worked back down the road. In three hours the police had recovered the car and arrested the thieves.



DE HAVILLANDS IN AUSTRALIA: On the left, a "Nimbus"-engined D.H.50A, assembled by De Havilland Aircraft Pty., Melbourne. On the right, an Australian-built "Cirrus-Moth."

The new aerodrome at Melbourne: An Aerial View, showing Larkin buildings and river at back, providing sea-plane mooring base. It is situated 2 miles from Hobson's Bay.



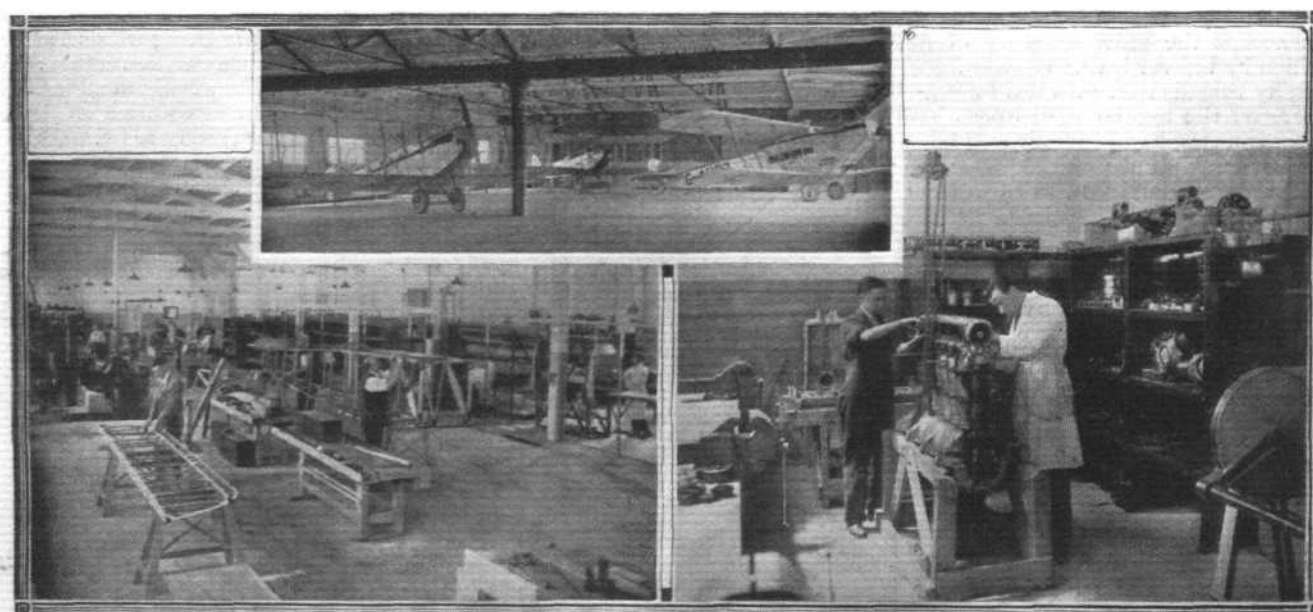
The medical work accomplished by Dr. Hope-Michod and others by means of Qantas aeroplanes has been so notable that the Australian Inland Mission is now arranging with Qantas for a permanent arrangement by which the Mission doctors will be able to use aeroplanes for their work. The scheme was to come into operation in April of this year.

In the main, the experience of Australia has proved that aircraft show up to least advantage when working in rivalry with railways. They score most heavily when they are the only means of communication, or are only rivalled by coasting steamers, camels, bullocks, horses, or Ford cars. For this reason an air service between Brisbane and Charleville was not originally considered worth while. But in the case of trunk lines it has been found that passengers will, if they can, book right through by aeroplane, whether a train follows the same route for part of the way or not. A Brisbane man who wants to visit Cloncurry resents the discomfort and delay of having to rail out to Charleville before he can emplane. It has therefore been the ambition of Qantas for a long time past to have their mail route extended to the State capital—

as was done long ago in West Australia when the Geraldton-Perth extension was sanctioned. This will soon be an accomplished fact under the new scheme of aerial expansion which Mr. Bruce's Government has adopted. In the meantime an unsubsidised delivery of newspapers by air from Brisbane to Toowoomba is in actual operation. The other end will also be extended from Camooweal to Darwin.

It should be added that in over five years of running there has been only one fatal accident on the Qantas line, while the regularity and general efficiency of the service have been of the highest standard. The idea of a Queensland without a Qantas is now unthinkable. There are very few air lines outside Australia of which as much as that could be said.

In November last the annual report of the company was presented by the present chairman, Mr. Fergus McMaster. It stated that after paying all expenses in connection with the management, the establishment of the two flying schools at Longreach and Brisbane, the Normanton extension, and after allowing £3,821 14s. 3d. for depreciation and £410 in respect of the Tambo accident, there remained a net profit



THREE VIEWS IN THE LARKIN WORKS: Above, a corner of the hangar (160 ft. by 80 ft.), containing a Sopwith "Wallaby," a D.H.50A, and a A.N.E.C. III. On the left, a corner of the workshop, with stores in background, and on the right the dustproof engine repair room.

of £4,019 17s. 10d. It was decided not to declare a dividend with this, but to place the sum to general reserve account, thus increasing the reserve capital to £7,380 10s. 5d. There is nothing grasping about the sporting enthusiasts who rule the fortunes of Qantas.

The Larkin Aircraft Supply Co., Ltd.

Melbourne Aerodrome, off Dudley Street, Melbourne

The Larkin firm came into existence soon after the Armistice, was best known in its early days as the Australian agents for Sopwith aircraft. The firm was once granted contracts for mail services Adelaide-Sydney and Sydney-Brisbane, but for various reasons the second of these services never came into being. Such an air line would be in direct competition with a railway, and therefore its prospects were not very brilliant. After various negotiations and long delays, the Adelaide-Sydney line was opened in June, 1924. This was 790 miles in length. The very hilly country from Sydney as far as Cootamundra with few landing grounds and bad visibility in winter proved unsuitable for an air line, while a railway

on subsidised service and 145,846 miles on private flights. It has carried 303,975 paying passengers, 30,135 letters, and 944 lb. of freight. The figures for letters and freight show the competition of the railways, which, though slower than the airway, still are available; whereas the two older companies have things all their own way. In the matter of passengers, however, the Larkin firm, though flying over less unsophisticated country, has been most successful in attracting patronage. It has no serious accidents to report.

The Australian Aero Club and Private Flying

THE Australian Aero Club is affiliated to the Royal Aero Club. It functions mainly through branches in the various States, and these branches run most of the light aeroplane clubs and flying schools. There are sections of the A.A.C. and light aeroplane clubs at Sydney, Melbourne, Adelaide, and Tasmania. A branch of the Victorian section exists at Geelong. Flying schools at Brisbane and Longreach are a branch of Qantas activities, while the school at Perth likewise is managed by West Australian Airways. At Broken Hill a



Sir Charles Wakefield's Gift: The Avro "Cirrus-Avian" presented by Sir Charles to the Federal Government was handed over by Mr. Bruce to the Australian Aero Club (N.S.W. Section) on March 31 at Mascot aerodrome. In the photograph the machine is seen just after being erected at the Larkin Works, Melbourne.

provided quite satisfactory communications between those two points. Accordingly the service was re-organised in July, 1925. The line Adelaide-Cootamundra is a useful one, as it short circuits the railway lines, which more or less follow the coast. It was retained, with one service weekly in each direction. The length of the route is 578 miles.

In addition to this main line two branch lines were added, Mildura to Broken Hill, and Hay to Melbourne, each with two services weekly in each direction. Mildura-Broken Hill is 189 miles in length, and Hay-Melbourne is 233 miles.

The routes run: (a) Adelaide, Swan Reach, Renmark, Mildura, Euston, Balranald, Hay, Carrathool, Narrandera, Cootamundra. (b) Mildura, Tartna, Broken Hill. (c) Hay, Rochester, Echuca, Deniliquin, Melbourne.

Machines start from Adelaide every Tuesday and from Cootamundra every Thursday. On Tuesday and Friday machines start from Broken Hill to meet the main line machines, and start back on Thursdays and Sundays. Machines leave Melbourne for Hay on Tuesdays and Thursdays to connect with the machines on the main line, while on the same days machines leave Hay for Melbourne. Thus the three capital cities, Adelaide, Melbourne, and Sydney, are brought much nearer to each other by aeroplane than when the only connection was by rail.

Broken Hill is an important mining centre, one of the largest inland towns in Australia. It has a very round-about rail connection with Adelaide, but no direct communications with either Melbourne, or its own capital, Sydney—for it is situated in New South Wales, though in point of distance it is much nearer to Adelaide.

The Melbourne-Hay air line is not only useful at the present time, but it also points the way to a further line from Hay to Charleville, which would bring Melbourne into direct air connection with Camooweal and ultimately with Darwin.

The Larkin fleet consists of ten aeroplanes, viz., three Anec III monoplanes, with Rolls-Royce "Eagle VIII" engines, three D.H. 50A's with Pumas, and four Sopwith machines, an "Antelope," a "Gnu," a "Wallaby," and a "Dove."

The service has been most efficiently conducted since it really got into its stride. It has flown 473,577 machine miles

flying school has recently been started by Wings, Ltd., with an equipment of two Genet-Avians. The other schools and clubs are equipped with Cirrus-Moths.

From the Armistice until 1922 the Australian Aero Club played a prominent part in the agitation for Government control of civil flying. When the "slump" years came, it, like other flying activities, grew considerably less active. As the success of the two older air lines gradually came to be realised in the big towns, interest in flying began to revive, and at that very appropriate moment Sir Alan Cobham made his great flight to Australia and back. A flying "boom" followed, and resulted in the revival of Aero Club activities in the shape of the formation of light aeroplane clubs and flying schools. The movement has spread rapidly and is obviously full of life and vigour.

The light aeroplane opens up a new life to men in the out-back. Earlier passages of this article have endeavoured to show how very lonely life must be on some of the large stations far away from any rail. The airways and the light aeroplane movement are gradually abolishing this solitude, and bringing the squatters and station owners and managers into touch with each other and with the outside world. The two movements do not clash. There is plenty of room for both, and there is still a vast amount of ground to be covered by the aeroplane, which only the aeroplane can cover. Australia, in fact, offers a market scarcely, if at all, less wide than Great Britain to the makers of these handy little machines. The "Moth," the "Avian," and the "Widgeon" have already made their mark out there.

The New Programme—Circling Australia by Air

During the last Imperial Conference, Mr. Bruce, the Premier of Australia, was manifestly impressed by what he saw of aircraft and flying in Great Britain. He had already been for a trip in a Qantas machine, and had expressed his appreciation of the work which the air line was doing in Queensland. The Governor-General, H. E. Lord Stonehaven, is an ex-officer of the Royal Air Force, and frequently travels by air across Australia. A D.H.50 belonging to the Royal Australian Air Force was put at His Excellency's disposal for his journeys.

Last year the Commonwealth Government found itself in possession of a surplus, and it was decided to allot £200,000 to the development of civil air lines. The routes for which tenders will be called are:—

Adelaide-Perth.
Camooweal-Darwin.
Brisbane-Charleville.
Sydney-Brisbane.
Melbourne-Tasmania.
Sydney-Canberra-Melbourne.
Derby-Wyndham.

When these lines are all in operation, it will be possible to fly right round Australia, except for the section between Wyndham and Darwin. Of course West Australian Airways must first get to Wyndham; but once it has consolidated this section, the obvious intention is that it should also go on to Darwin and there make contact with Qantas.

This elaborate programme proves, if further proof were necessary, that the Commonwealth Government has realized that aircraft has a special work to do for Australia. The country is vast, and has a white population of roughly two persons to the square mile. The total white population is less than that of greater London. It is obviously impossible for such a population to afford all the railways which would be necessary to open up the country properly. Even sufficient roads good enough for old-type Ford cars are an impracticable dream. The existing railways are hampered by changes

the Air Ministry airships commission under Group-Captain Fellowes recently visited Australia and selected a site near Perth for the future airship station. When the airships in good time arrive at Perth with English mails only 10 or 11 days old, the aeroplanes will be ready to hurry the mail bags, on to the great centres in the south-east and east.

Mention has been made above of the need for extending West Australian Airways, first to Wyndham via Hall's Creek, and afterwards to Darwin; and of allowing Qantas to have its southern terminus in Brisbane. Both these lines should soon be in operation. The northern extension of Qantas will in the first place go to Daly Waters, and after that as soon as may be to Darwin. Mr. Bruce has said "A comparatively short aerial link of 650 miles will ensure that every week a mail will leave Brisbane and arrive in Darwin three days later, in comparison with one mail each month which reaches Darwin about eight days after despatch from Brisbane."

Sydney-Brisbane is to be a seaplane service round the coast, which is well supplied with sheltered waters and is considered very suitable for seaplane work. The train journey takes 27 hours, and the air trip will only take seven.

Melbourne-Tasmania is a service which in any case was bound to be started some time, but it is not considered likely to become self-supporting in the near future. The steamer traffic is somewhat seasonal, and climatic conditions are not so favourable as on some other routes. Three-engined amphibians are considered desirable for the operation of



Members of the Sydney Club standing in front of a de Havilland "Cirrus-Moth."

of gauge at the frontiers of the States, and between Perth and Adelaide there are two, if not three, such changes of gauge. There is also this consideration about laying down a new railway line. One is tied to the permanent way. If judgment in planning the line has been at fault, the mistake cannot easily be corrected afterwards. Therefore every consideration concerning the problem of communications in Australia leads to the same conclusion, namely that aircraft and only aircraft can provide what is so badly needed. In other countries it sometimes is a deliberate policy for the Government to spend money on supporting aircraft and airways because it is thought that the country would be a loser if the aircraft industry were to decline and die. Such a policy is perfectly comprehensible and justifiable. But it is not the policy of Australia. In the Commonwealth air lines are subsidised, not for the sake of aircraft, but for the sake of the public weal.

Perth is the mail port of Australia. Without an Australian Bradshaw beside one, it is difficult to say exactly how long it takes the English mails to get from Perth to Melbourne, Canberra, and Sydney. Certainly the breaks of gauge do not expedite matters. The new air line—which it is believed will use Hercules-Jupiter aeroplanes—will land only once between Perth and Adelaide. The landing will be made after dark, and the machine will start again before dawn for Adelaide. The saving in time will amount to about three or four days each way, according to the destination of the letter. While on the subject of this route it may be mentioned that

this route. The use of amphibians will permit the service to be carried across the island to Hobart, the capital, instead of stopping short at Launceston, the northern seaport. The Government is to be congratulated on deciding to tackle this problem at once, instead of waiting and postponing a service which is desirable in itself and ultimately inevitable.

While an airway between Melbourne and Sydney would follow the line of the railway, and perhaps not save enough time to make the support of an airway worth while, the opening of Canberra as the Federal capital has altered the position. Canberra must have quick connections with both Sydney and Melbourne, and therefore an air line became inevitable. This line also gives an additional reason for proceeding with the seaplane service Brisbane-Sydney. The Brisbane M.P.'s will be able to fly right through to Canberra.

Incidentally, it may be mentioned that Mr. Bruce's new house outside Melbourne has been equipped with an aeroplane garage. It is not certain that he has yet acquired an aeroplane of his own, but he frequently hires one in order to save his valuable time and energies when travelling to the capital.

The more one contemplates this magnificent Australian programme, the less does one feel inclined to pessimism about British commercial air efforts as compared with the efforts of some continental countries. The latter are subsidised on a scale which proves that their primary object is the advantage of flying; while the Australian policy is to spend public money on flying only when it will benefit the people of the tracts which the aircraft serve.

The Royal Australian Air Force

Though mention has been made above of the genesis of the Royal Australian Air Force, once the Australian Flying Corps, this is not the place to indulge in a history of its war records. The present organisation of the force is as follows:—

Under the King, H.E. the Governor-General is Commander-in-Chief, and H.R.H. the Duke of York is an Hon. Group Captain in the R.A.A.F. The Minister for Defence is in charge of all flying in Australia. There is a Council of Defence with an Air Member and an assistant secretary for the air force. Air-Commodore R. Williams, C.B.E., D.S.O., p.s.a., is Chief of the Air Staff.

The R.A.A.F. list published in August last year gives one Group Captain, four Wing Commanders, 12 Squadron Leaders, 16 Flight Lieutenants, and 15 Flying Officers and Pilot Officers in the General Duties Branch of the Permanent Force. Some of these officers held Short Service commissions. There were also five officers attached from the Royal Australian Navy, and 12 officers seconded from the Australian military forces. The Stores and Accounting Branch contained 13 officers, and the Medical Branch four officers. The Citizen Air Force had a General Duties Branch of 48 officers, a Stores and Accounting Branch of three officers, a Medical Branch of one officer, and a Chaplains' Branch of four officers. There was also a Reserve of three General Duty officers. The most recent returns show 95 Regular officers and 777 Regular airmen; but the estimates for 1927-28 provide for 110 officers and 860 airmen in the Regular R.A.A.F.

The force is organised as follows:—

- Headquarters, Victoria Barracks, Melbourne.
- Liaison Office, Air Ministry, London.
- No. 1 Flying Training School, Point Cook, Victoria.
- No. 1 Aircraft Depot, Laverton, Victoria.
- No. 1 (Composite) Squadron, Laverton.
- No. 3 (Composite) Squadron, Richmond, New South Wales.
- No. 101 (Fleet Co-operation) Flight, Richmond, N.S.W., but operating from a base at Bowen, Queensland.

Nos. 1 and 3 Composite Squadrons have each one flight of S.E.5a fighters, one flight of D.H.9's with Pumas, and one flight of D.H.9a's with Libertys. The Fleet Co-operation Flight is equipped with Seagulls with Lion engines. The first six were bought direct from the Supermarine Aviation Works, Ltd., and afterwards three more were acquired from the Royal Air Force. The first line establishment of the Flight, however, is four machines. The Flight has been engaged on an aerial survey of the Great Barrier Reef off the coast of Queensland in conjunction with the Royal Australian Navy.

Lately two Supermarine "Southamptons" with Napier Lion engines, and a number of D.H. "Cirrus-Moths" have been added to the equipment of the R.A.A.F.

In 1921, six Fairey iiiD float-planes with Rolls Royce Eagle engines were acquired for the R.A.A.F., and three of them are still on charge. The equipment of the two composite squadrons comes from the gift of aircraft made to the Commonwealth by the Air Ministry after the war.

In the present summer, Air Marshal Sir John Salmond, K.C.B., C.M.G., C.V.O., D.S.O., will visit Australia to advise the Commonwealth on a scheme of aerial defence for the Continent-island. It is confidently expected that a complete re-equipping of the R.A.A.F. with new types of aircraft will follow the drawing up of his report.

Without waiting for that report, however, one may express the opinion that the Australian Defence Department has not been far wrong in concentrating on marine air defence. It may put its trust mainly in Singapore, but Australians have decided, and few will disagree with them, that they must possess an independent power of striking at an invader. A really powerful navy is beyond the scope of the national income, but a very effective air force, complete with bombers, torpedo-planes, reconnaissance machines, and protective fighters, is not such an extravagant idea. In due course, we shall learn what Sir John has to say about it.

Useful preliminary steps have been taken by the air force in exploring the country which has to be considered from the point of view of air defence. The first thing necessary was to have aerial knowledge of the coasts of Australia itself. In 1924, Group-Captain Goble, C.B.E., D.S.O., D.S.C., then acting Chief of the Air Staff during the absence of Air-Commodore Williams in Great Britain, undertook a flight round the coast in one of the Fairey iiiD-Eagle seaplanes. His pilot was the late Flt.-Lieut. I. E. McIntyre, C.B.E., A.F.C. They left Point Cook on April 6, 1924, and flying eastward to Sydney thence proceeded northwards up the Queensland coast to Thursday Island to the north of the York Peninsula. This was a flight of 2,828 miles, and the

machine reached Thursday Island on April 16. A stay was made there until April 23, and then the Fairey headed out across the great Gulf of Carpentaria for 480 miles to Elcho Island. Next day they did another 336 miles on to Darwin, and were once again in comparative civilisation. From Thursday to Darwin, not a single ship was sighted, and the C.A.S. reported that in its present state the north coast of Australia was absolutely unfit for flying over, for defence or any other purposes, without proper organisation in the matter of communications, wireless, repair depots, etc. They then flew down the west coast to Perth, 3,089 miles from Thursday, arriving there on May 11. The next big ordeal was the Great Australian Bight, from Albany to Port Lincoln, a very unpleasant piece of water for flying over, though the land to the north is eminently suitable for landplane work. Melbourne was reached on May 19, the third stage from Perth to Melbourne totalling 2,534 miles. The flight was a magnificent performance, and deservedly won for the pilot the award of the Britannia Trophy.

The second great R.A.A.F. flight was a survey of the Pacific islands by Air-Commodore Williams, with Flt.-Lieut. McIntyre again acting as pilot, and Flt.-Sergt. L. J. Trist, A.F.M. went as mechanic. The machine used was a D.H.50 with Puma, and fitted with floats. The object of the flight was to gain a knowledge of the geography and flying conditions in the Pacific islands adjacent to Australia, which, owing to the development of aircraft are fast coming within range of the Continent. The knowledge was required for defence purposes, but could also be turned to other uses.

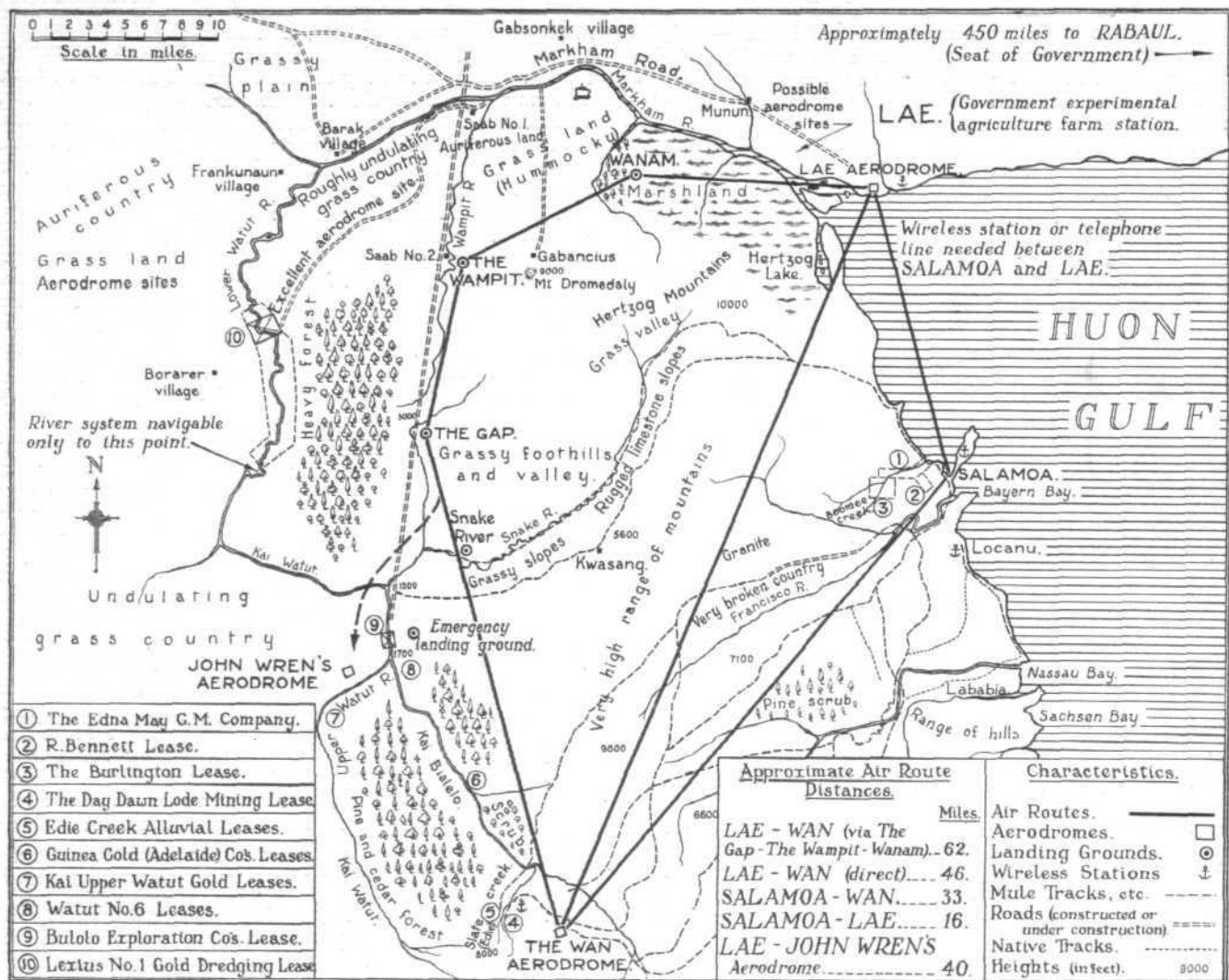
The start was made from Point Cook on September 24, 1926, and the usual course was followed up to Thursday Island, some small mechanical difficulties delaying the party for several days en route. On October 11, a flight of 130 miles brought the machine to the Government station at Daru in Papua, an island without a sheltered port. From there on, the journey was over places most of which had never been flown over before. The original intention had been to visit the Fiji Islands and Samoa. But repeated engine trouble, mainly connected with the radiator, so delayed the party that the approach of the monsoon made it inadvisable to carry out the full programme. The Defence Department cabled that the flight ought not to proceed beyond the Solomon Islands. A new engine was procured from Sydney and was installed at Tulagi. The return journey was a long fight against bad weather, but Point Cook was reached on December 7. This flight covered 10,000 miles, and made a useful beginning of aerial knowledge of the Pacific islands, which will doubtless be increased before long.

On July 21, 1927, a great inland flight to inspect all the aerodromes and landing grounds in Australia was made by three landplanes of the R.A.A.F. Air-Commodore Williams led the flight in a D.H.50, and was accompanied by two D.H.9's. Over 60 aerodromes were inspected. The route followed was roughly:—Melbourne, Adelaide, Broken Hill, Hay, Brisbane, up the Qantas line to Normanton and Camooweal, Darwin, down the W.A. airway line to Perth, Adelaide, Alice Springs, Anthony's Lagoon, Charleville, Bourke, Hay, Melbourne. It was completed on September 10 last. The distance amounted to about 10,000 miles.

Civil Flights

Apart from the taxi work carried out by the three regular mail companies, some great civil flights have been made in Australia. In 1924 Col. H. C. Brinsmead, Controller of Civil Aviation, with Capt. E. J. Jones, M.C., D.F.C., as pilot, and Mr. R. H. Buchanan as engineer, flew in a D.H.50 with Puma for 7,658 miles round the inland of Australia. They left Melbourne on August 7, and followed the route Cootamundra, Narromine, Bourke, Cunnamulla, Charleville, Longreach, Cloncurry, Camooweal, Brunette Downs, Anthony's Lagoon, Newcastle Waters, Katherine, Darwin, Perth, Melbourne. In the Northern Territory the party flew a somewhat circuitous route in order to inspect the land and gain an idea of its suitability for development by air. A very favourable opinion of such possibilities was formed, and in due course no doubt the possibilities will be realised. Melbourne was reached on August 29 after a flight quite devoid of adventure.

In June 19, 1927, Mr. C. Kingsford Smith and Mr. C. P. T. Ulm, of the Interstate Flying Services, Ltd., set out in a Bristol Tourer, bought from West Australian Airways, to fly round Australia in 11 days. They started from Sydney, and arrived back there on June 30, having covered 7,240 miles in 88 hours 26 minutes' flying time. The route was up the Qantas line to Darwin, down West Australian Airways route to Perth, and then via Naretha, Wirramina, and Melbourne to Sydney.



SKETCH MAP OF NEW GUINEA GOLD FIELDS: This has been prepared from information placed at our disposal by the R.A.A.F. Liaison Officer in London.

Five days after the start Mr. K. Anderson, of the same company, started off with an engineer and a commercial traveller on the same route by the same stages. They were more leisurely, however, and took 13 days to complete the trip.

Bert Hinkler's great flight to Australia from England in 16 days is too recent to need more than a passing reference; and the same may be given to the still more recent flight by an Australian, Capt. G. H. Wilkins, M.C., across the Arctic Ocean with an American pilot.

The New Guinea Gold Fields

The discovery of gold in the neighbourhood of Edie Creek in New Guinea has given a new opportunity to aircraft to prove their usefulness. Edie creek is 80 to 100 miles inland (by ground transport) from the port of Salamana. Native carriers take about a fortnight to do the return trip, and rice has to be carried as food for the bearers, so that it is reckoned that out of 20 carriers only 11 carry goods required by the miners, each man carrying 50 lbs. Sickness and desertions are apt to reduce the number.

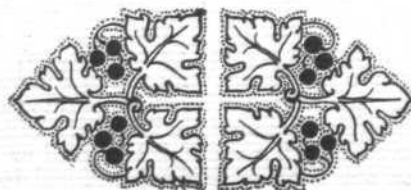
A company, Guinea Gold N.L. (no liability) bought from the Department of Civil Aviation its D.H.37 with Puma engine, and engaged Mr. E. A. Mustard to pilot the machine. The country was surveyed and aerodromes and landing grounds of sorts were laid out. The map gives the best idea of the route flown. The Markham river flows through a wide valley, but its tributary the Wamput flows through a gorge

with high mountains on each side. The hill natives are cannibals, but during the survey they showed themselves interested in the aeroplane, and the surveyor comfortably remarked that in the event of a forced landing "I do not think they would give much trouble if the pilot treats them carefully."

The air route is only about 42 miles long, and Mr. Mustard has been making the return trip five days a week, carrying 500 lbs. each trip. The cargo taken up to the field consists mostly of rice. Guinea Gold N.L. has recently sold its interests to a new company named Guinea Airways, Ltd.

Another firm, Bulolo Goldfields Aeroplane Service, employs Mr. R. J. P. Parer, who once flew with the late Mr. McIntosh from England to Australia, to fly a D.H.4 with Eagle. Messrs. Kingsford Smith and Keith Anderson, of the Interstate Flying Services, Ltd., have two Bristol Tourers on the same work, and other companies are employing an Airdisco Avro and a Moth. Guinea Airways has also ordered a Junkers machine with Jupiter engine.

It would be impossible to say all that could be said about flying in Australia without writing a book on the subject—and by the time the book was published, it would be out of date. The above account is certainly guilty of many sins of omission, and doubtless of some sins of commission also. But perhaps enough has been said to justify the claim that Australia is the foremost flying country in the British Empire, and bids fair to be before long the most important flying country in the world.



The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

A MEETING OF THE COMMITTEE OF THE Royal AERO CLUB WAS HELD AT 3, CLIFFORD STREET, ON MAY 9th, 1928.

Present.—Lieut.-Col. M. O'Gorman, C.B., in the chair; Griffith Brewer; Capt. R. J. Goodman Crouch; E. J. B. How; Col. F. Lindsay Lloyd, C.M.G., C.B.E.; Lieut.-Col. Sir Francis K. McClean, A.F.C.; Maj. H. A. Petre, D.S.O., M.C.; Capt. C. B. Wilson, M.C.; H. E. Perrin, Secretary; B. Stevenson, Assistant Secretary.

Election of Members.—The following new members were elected: William Alexander Fallon, Flight-Lieut. Frank Leslie White.

Aviators' Certificates.—The following aviators' certificates were granted:—

8266	Antonio Habsburg	..	Henderson Flying School.
8267	Norman Albert Brett	..	Norfolk and Norwich Aero Club.
8268	Ashton Christopher Mills	..	Lancashire Aero Club.
8269	Miles Brooking	..	Lancashire Aero Club.
8270	Herbert Denis Parkin	..	De Havilland Flying School.

F.A.I. Conference, Brussels.—Lieut.-Col. M. O'Gorman was appointed delegate to represent the club at the F.A.I. Conference at Brussels in June.

World's Records.—Class "C." Greatest speed over 100

and 500 kilometres, carrying a useful load of 1,000 kilograms. De Havilland "Hound," fitted with 550 h.p. Napier "Lion XI." Pilot, Capt. H. S. Broad. April 27, 1928.

Performance

Speed over 100 kilometres .. 261·172 kilometres per hour.
" " 500 " .. 255·333 " "

It was decided to submit these performances to the F.A.I. for acceptance as world's records.

Banquet to Mr. A. V. Roe.—The date of the banquet to Mr. A. V. Roe was fixed for June 8, 1928.

Racing Fund.—The following donations to the racing fund were reported:—

Sir Charles Wakefield, Bart., King's Cup Race	..	£250
Sir Charles Wakefield, Bart., Aerial Derby	..	500
Sir Charles Wakefield, Bart., Official Meetings	..	400
Robinhood Engineering Works, Ltd., Official Meetings	..	100

Other donations:—

Lieut.-Col. Sir Francis K. McClean, A.F.C.	..	£5	0	0
Capt. C. B. Wildon, M.C.	..	3	3	0
A. V. Roe	..	1	1	0
G. Merton, M.A., M.C.	..	1	1	0
E. J. B. How	..	1	1	0

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

Banquet to Mr. A. V. Roe

A BANQUET, to be followed by a dance, will be given to Mr. A. V. Roe by the Royal Aeronautical Society, the Royal Aero Club, the Society of British Aircraft Constructors, and the Air League of the British Empire, in recognition of his pioneer work on machines of his own design and construction, and of the great debt which British aviation owes to him during the past 20 years. H.R.H. the Duke of York has graciously consented to honour the gathering with his presence after the banquet. The banquet will take place at the Savoy Hotel at 7.30 for 8 o'clock on Friday, June 8. Tickets, £1 1s. each, exclusive of wines. Members may be accompanied by ladies. Application for tickets, should be made to the Secretary, Royal Aeronautical Society, 7, Albemarle Street, W.1.

Death of M. Clement Bayard

WE regret to announce the death, at the age of 73, of M. Clement Bayard, the well-known French cycle, automobile and aeronautical pioneer. Born in 1855 at Pierrefonds, he first came into prominence in 1878 as the constructor of the "Clement Bicyclette"—one of the first low-wheeled "safety" bicycles—which he successfully developed during the following years. The motor car next claimed his attention, in 1895, and the Clement Bayard cars soon became world famous. In the early days of aeronautics M. Clement Bayard watched with interest the experiments of Santos Dumont and Farman, and he, also, tried his hand at building aircraft, with varying degrees of success. His first important achievement in this branch of engineering was the Clement-Bayard I airship, constructed in 1908. A second, and improved, airship of his, it will be remembered, accomplished a flight between Paris and London on October 16, 1910. His subsequent work in connection with aeronautics is too well-known to need further mention here, but it has been sufficiently important to make his loss a very serious one in the world of aviation.

Gen. Guidoni's Accident

REGARDING the fatal accident to Gen. Guidoni to which we referred in our issue of May 3, we have received some further details which explain the cause of the accident. Gen. Guidoni wished to make a personal experiment with the "Salvator" parachute (the type adopted by the Italian Air Force), in order to test the regular working of the lever, fixed on the belt, which controls the opening of the parachute—it was the "free" model, and not the "Static" or automatic type which Gen. Guidoni was trying. With the "free" type it is, of course, essential to operate this lever only when well clear of the machine. Gen. Guidoni, however, apparently pulled the lever at the same moment at which he

jumped. As a result, although the parachute was instantly released, the General became entangled with the ropes and the parachute was unable to open in the usual way; it is also reported that this proper opening was further hindered by the fact that Gen. Guidoni jumped backwards.

U.S. Air and Rail Co-operation

THE formation in America of a £1,000,000 company which will inaugurate a combined rail and aeroplane service across the American continent was announced officially in New York on May 15, by Mr. C. M. Keys, President of the Curtiss Aeroplane and Motor Company. An initial route will be from the Atlantic to the Pacific Coast a distance of 3,000 miles. Passengers leaving New York in the evening will arrive at Los Angeles on the second afternoon following. The service will be started shortly and will be further mentioned in our columns.

Torpedo Aircraft Demonstration

At the Brough Aerodrome, Yorkshire a demonstration of the Blackburn Ripon II. (500 h.p. Napier Lion) was given on May 15. Piloted by Capt. A. M. Blake, it flew low over the River Humber and a dummy torpedo was released. Another of the Blackburn Aeroplane Company's modern machines flown was the Lincock, a single-seater fighter fitted with a 200 h.p. Armstrong-Siddeley Lynx. The pilot was Sqd.-Ldr. J. Noakes. A fuller description of this interesting display will be given in our next issue.

Aerial Timetable

WE recommend to all air passengers the first issue of the *Aerial A.B.C. and Commercial Air Line Gazetteer*. It will be issued quarterly, price 1s., and is a complete guide to the air lines of the world, the times of departure and arrival of air liners, fares, the companies operating air routes, agents and receiving depots for air goods. There is information on air postage, exchange of rates, passports, and a guide to many other aviation spheres, such as the flying clubs, the societies, etc. Sir Sefton Brancker writes an interesting and congratulatory foreword.

World's Records

THE Royal Aero Club has been advised of the following world's records:—

CLASS C (Aeroplanes): Duration (returning to point of departure). *United States.*—Edward A. Stinson and George W. Haldemann. Jacksonville, Florida, March 28–30, 1928. Stinson-Detroit Monoplane, 220 h.p. Wright-Whirlwind.—53 hrs. 36 mins.

CLASS Ca (Seaplanes): Greatest Speed over Straight Line Course. *Italy.*—Major Mario de Bernardi. Lido, Venice, March 30, 1928. Macchi 52, Fiat A.S.3.—512·776 kms.

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

MEDICAL EXAMINATIONS

A Guide to Pilots

THE medical examination is not regarded as one of the comfortable experiences that man is heir to. It is invested with serious issues and mystery. Doctors can give a twist to a life story that the genius of even O. Henry could not command, and create a terror that cannot ever be surpassed by our leading terror manufacturer, Mr. Edgar Wallace. The atmosphere of the involuntary medical examination is not congenial and neither is medical literature as a rule.

But the book reviewed in this article, although a medical one, is nothing to be frightened about, however. His Majesty's Stationery Office has published it and it is called "The Medical Examination of Civilian Aviators" (price 1s. net). It should be obtained by private owners, for many of them aspire to the "B" licence and, therefore, they will have to conform to the medical standards applying to civil airmen operating commercial air lines. We have no doubt it will not provide easy reading to most owing to the unavoidable technical terms which sprinkle the book well, but the natural curiosity that we all have about the physical standard required for flying ought to be fairly satisfied.

The effective selection of airmen, we are told, is based upon a careful consideration of the personal history of the candidate, especially with relation to nervous stability, respiratory and circulatory efficiency and past illnesses; and also the eye, ear, nose and throat.

It is interesting to note that the nervous excitement created in the examinee on facing some tests is allowed for. All those who have gone through them will find many revelatory facts in the chapters. In the breath-holding test, for instance, the average time taken by the normal fit British pilot is 69 seconds. The usual answer for giving up is "I felt I should burst" or "I wanted to breathe." Those who suffer from marked disability at great altitudes almost invariably return an abnormal answer, such as "I became dizzy" or "things went blurred." This test is believed to indicate the stability of the respiratory centre, and indirectly of the nervous system generally. When the time counted is short and an abnormal answer given, it is likely that the subject will suffer from want of oxygen at great altitudes. The test further indicates the resolution to "carry on" under difficulties.

General dimensions such as height and chest measurement are recorded in centimetres and tenths of centimetres and the weight in kilogrammes and parts thereof. A "B" licence candidate is rejected if he has not the usual number of fingers and thumbs and legs and feet. No mention is made of the validity of an artificial leg, but for an "A" licence an

amputation below the knee is not necessarily disabling provided that the movement at the knee joint is free.

With regard to the heart a slight deviation in size or shape from the normal condition is not unduly emphasised. At the age at which most candidates present themselves slight variations in the position of the apex beat and the area of cardiac dullness may be of no importance. Marked dilatation, with rapid action, is an indication of organic disease and is sufficient cause for rejection. A pulse rate of 108-120 is not infrequent and is often proved to be due to nervous excitement and this, though not necessarily regarded as a serious sign, is not looked upon with favour.

For successful flying, a circulation adequate under stress must be possessed besides a normal heart. Gross organic disease of the central nervous system is practically non-existent at the age at which most candidates present themselves, but evidence to the contrary means necessary rejection. The demeanour during the examination often gives clues. Habit spasms, stammering, tremor, restless movements of face, hands or feet, indicate defective nervous control, which is carefully noted.

There is no question, says the book, that nervous instability means total unfitness for air work, but it has to be remembered that the condition may only be temporary.

A high degree of visual acuity is called for in flying. Allowances are made for "A" licence holders and glasses allowed to be worn. Muscle balance and visual judgment are considered to play even a greater part in accurate flying than visual acuity. It has been proved that lack of true ocular muscle balance is the most common cause of error in judgment when landing. It accounts for those who flatten out too soon or too late. Colour vision is necessary as coloured lights are used as signals.

To test a pilot's physical efficiency in aerobatics the rotating chair has been devised, and the pulse rate or arterial pressures, which are little affected in the case of fitness, are noted. When a subject is in the chair it is first pointed out that an aircraft, when spinning, is relatively out of control and it is necessary to centralise the controls. If he is not in a condition to perform the movement then a crash results. He is asked to look inside the knee further from the direction of the spin whilst in the chair, which is subjected to a relatively fast spin; ten times in twenty seconds. When it is stopped the pulse rate and arterial pressures are taken again and compared to the normal.

We can earnestly recommend this book to all who endure flying medical tests or contemplate doing so.

LIEUT. R. R. BENTLEY RETURNS

FLIGHT-LIEUT. R. R. BENTLEY, A.F.C., has been the first pilot to fly to Cape Town from England and back in a light aeroplane. He reached Croydon with his wife, Mrs. Doris Bentley, in his D.H. "Moth" (Cirrus) on May 12. They flew on immediately to Stag Lane and then to Norfolk. Lieut. Bentley came into prominence last year when he made the first light plane flight to Cape Town between September 1 and September 28. It was a solo effort carried through without hitch, and won him the Air Force Cross. He was also awarded the Britannia Trophy, presented by the Royal Aero Club for the most meritorious performance of the year.

The return flight was his admirable method of spending a honeymoon. Progress was leisurely, and interrupted to escort Lady Bailey across the danger zone in Southern Sudan from Khartoum. Lady Heath made her recent Cape Town-Cairo flight in her Avro "Avian" (Cirrus) mostly in company with the D.H. "Moth," and went ahead from Cairo, but her minor troubles brought the Bentleys level again on the North African Coast at Tunis. They took the lead to

England, although, of course, there was no intentional race.

The start from Cape Town was reported on March 3, and they were at Nairobi on March 14. Whilst Mrs. Bentley waited at Khartoum, her husband escorted Lady Bailey on April 5 to Nimule. He reached Cairo on April 15, and decided to have the engine overhauled at Aboukir.

At Tunis, the D.H. "Moth" landed soon after Lady Heath's Avro "Avian" descended on May 4. After that he was next mentioned at Le Bourget, Paris, on May 11.

He plans to fly back to South Africa with Mrs. Bentley in the autumn. The distance covered, out and home, was 16,000 miles.

Lieut. Bentley is a pilot instructor in the South African Air Force at the headquarters, Roberts Heights. He was born in England, and is an adopted South African, having spent many years in the Colony, as well as three years in Canada. The D.H. "Moth" he flies was christened "Dorisy," after his wife, by Lady Bailey before his flight to Cape Town.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club Filton, Gloucester. Secretary, Capt. C. F. G. Crawford, Filton Aerodrome, Patchway.
Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.
Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, A. H. Bell, c/o The Club.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Manager, F. Gough, The Aerodrome, Mousehold, Norwich.
Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria Street, Nottingham.
The Scottish Flying Club, 101, St. Vincent Street, Glasgow Secretary, Harry W. Smith.
Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.
Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

REPORT for week ending May 13.—Flying time, 39 hrs. 15 mins. Dual instruction, 21 hrs. 20 mins. Solo flying, 17 hrs. 55 mins.
 Dual instruction.—With Captain S. L. F. St. Barbe: H. B. Saunders, J. R. Rymill, S. Blythe, Mrs. Cook, Dr. Cook, B. L. Middleton, A. D. Blumlein, J. A. Crane, H. Sutton, R. Ward, Miss Wilson.
 With F. R. Matthews: Miss V. M. Cholmondeley, Miss H. Cholmondeley, P. Ward, A. D. Blumlein, Miss Wilson, J. R. Rymill, E. Richardson, A. J. Richardson, J. C. V. K. Watson, R. L. Portway, C. G. Gotheridge, P. A. Wills, G. Peckham, E. Davis, R. Drysdale Smith, L. Swan, E. R. Andrews.
 Solo flying.—W. J. Roche-Kelly, C. E. Murrell, R. Sanders-Clark, F. C. Fisher, J. C. V. K. Watson, A. J. Richardson, J. J. Hofer, R. Ward, J. A. Brewster, E. R. Andrews, P. W. Hoare, Will Hay.
 On Friday, May 11, F. C. Fisher passed the tests for his Aviator's Certificate.

Meeting of Members.—The Meeting of the Members held on Monday, May 7, 1928, to consider the proposals for the future policy of the club was fairly well attended. The general opinion expressed by the Members was that the club should acquire six new machines of the latest type equipped with modern engines.

The proposal to issue debentures of £10 each up to £4,000 was unanimously approved, and the sum of £400 was definitely promised at the Meeting. The particulars relating to those debentures will be issued within the next few days, and it is hoped that all Members will do their utmost to support the Committee in its endeavour to carry through these proposals, by taking up one or more of the debentures. The debentures will carry interest at 5 per cent. per annum, payable half-yearly on June 30 and December 31, and will constitute a first charge on all the assets of the club.

BRISTOL & WESSEX AEROPLANE CLUB

REPORT for month ending May 13.—Our Pageant on May 5 was a great success as far as the attendance was concerned. The weather was fine for the most of the day, but a thunderstorm somewhat marred the final events. Full reports of the meeting have already appeared in *FLIGHT*.

At Easter our Chairman, Mr. A. H. Downes-Shaw, accompanied by Mr. Jopp, flew his private "Moth" from here to Nice. It was a great achievement, and he was deservedly congratulated by the Committee on his return. We are hoping that he will give us a full account of his journey for publication. It was the first overseas flight by a member of the Club, and one which should set a fine example to his fellow-members.

We have had a great misfortune in the death of Mr. R. E. Hopper and Mr. D. Tanner, who were both killed when our Club machine, G.E.B.S.N., crashed near the aerodrome on Sunday, May 6. The Committee and Members are most grateful for the many expressions of sympathy they have received.

HAMPSHIRE AEROPLANE CLUB

REPORT week ending May 13.—Total flying time, 66 hrs. 30 mins.; dual instruction, 26 hrs. 20 mins.; "A" pilots, 20 hrs.; solo, 9 hrs. 55 mins.; passenger flights, 9 hrs.; tests, 1 hr. 15 mins.

Instruction (with Flight-Lieut. Swoffer): Miss Grace, Sir T. Munro, Mr. Starkey, Craske, Nash, Colls, Tillard, Wroughton, King, Hamilton, Donnor, Whittle, Fawkes, Goldman, Kerry, Major Jenkins, Schriber, Major Yeats-Brown, Miss Berent, R. King, Baynes, Powell, Oswald, Crook, Westlake, Mrs. Crook, Mr. Bott, Mandeville, Hamilton, Courtney.

Passengers (with Flight-Lieut. Swoffer): Mr. Allard, Read, Miss Berent. (With Capt. Kirby): Mr. Westlake, Crook, Mrs. Bell, Miss Turner, Mr. Allard, Miss Graham, Mr. Dovenay, Miss Kinghead, Miss Berent, Mrs. Holmes, Flight-Lieut. Tattersall, Sir T. Munro, Craske, Berney, Mappin, Grav, Boxall, Miss Grace, Mariner, Burn. (With Mr. Cripps): Mr. Lovett. (With Mr. Mc Kechnie): Mrs. de Burgh. (With Mr. Baynes): Mr. Read, Scott-Goddard. (With Mr. Oliver): Mr. Given.

We are still breaking records having this week broken our record week of 57 hrs. by 9 hrs. 30 mins., bringing this week's total up to 66 hrs. 30 mins. New flying members are joining every day, and bringing their friends along, when they discover that there is no resemblance to a lift, in flying in an aeroplane.

Our instructor is having a very strenuous time, and is kept on the go from morning until night.

LANCASHIRE AERO CLUB

REPORT for week ending May 5.—Flying time, 36 hrs. 20 mins.; instruction, 18 hrs. 10 mins.; solo flights, 11 hrs. 10 mins.; passenger, 5 hrs.; tests, 2 hrs.

Instruction (with Mr. Baker): Chart, Benson, Sellers, Stern, Miss Hill, Mills, Faulkner, Miss Baerlein, Weale, Taylor, S. Riley, Garner, Tweedale, Watson, Fallon, Mason, Parks, Stross, Greenhalgh, Taylor, W. Miss Emery, Harrison, Goss, Barlow, Secker, Patreux.

Soloists (under instruction): Tweedale, Brooking, Ruddy, Mills, Gort, Weale.

Pilots: Cohen, Davison, Nelson, Caldecott, Hall, Lacayo, Michelson, Harber, Meads, Caldecott, Twemlow, Goodfellow, Williams.

Passengers (with Mr. Cantrill): Brown, Rodman, Peake. (With Mr. Williams): Mrs. Williams, Gorton. (With Mr. Lacayo): Brimelow, N. Caldecott. (With Mr. Baker): Mrs. Bowdon. (With Mr. Goodfellow): Williams.

REPORT for week ending May 12.—Flying time, 31 hrs. 15 mins.; instruction, 18 hrs.; solo flights, 7 hrs. 35 mins.; passenger, 4 hrs. 50 mins.; tests, 50 mins.

Instruction (with Mr. Baker): Chart, Benson, Dewhurst, Sykes, Faulkner, Stross, Fallon, Harrison, Miss Baerlein, Riley, Scholfield, Goss, Davison,

Taylor, S. Sellers, Gort, Greenhalgh, Taylor W. Garner, Johnson, Weale, Miss Emery, Stern, Patreux, Mills, Mason. (With Mr. Cantrill): Mills. (With Mr. Scholes): Fallon, Meads.

Soloists (under instruction): Brooking, Ruddy, Tweedale, Mills, Goss (1st), Gort.

Pilots: Williams, Hall, Caldecott, Harber, Fallon, Cohen, Davison, Lacayo.

Passengers (with Mr. Goodfellow): Williams. (With Mr. Twemlow): Mrs. Twemlow. (With Mr. Lacayo): Vanderville, Mrs. Vanderville, Mills, Hammersley, F. Scholes, Atherton, Mrs. Atherton. (With Mr. Scholes): Foster, Riley. (With Mr. Cantrill): Emery. (With Mr. Michelson): Miss Humber. (With Mr. Williams): Meads.

A most disastrous fortnight. QL was crashed by hitting a fence, and is still out of commission. Mr. Goss did his first solo on RR, but she was flying again within a week. MQ blew half a cylinder off and came down with various parts of the engine missing. Boy Scouts are searching the neighbourhood for the other pieces. Altogether, we're feeling "proper poorly." Anti-cyclones may be floating about all around us, but there's a deep depression centred over Woodford.

MIDLAND AERO CLUB LIMITED

REPORT for week ending May 12.—Total flying time, 40 hrs. 12 mins.; dual, 21 hrs. 29 mins.; solo, 12 hrs. 18 mins.; passenger, 5 hrs. 15 mins.; test, 1 hr. 10 mins.

The following members were given dual instruction: (Instructors Flight-Lieut. Rose, D.F.C., and Mr. W. H. Sutcliffe): J. H. Briggs, R. C. Baxter, S. G. Hall, H. Coleman, S. Duckitt, Capt. Chaytor, G. E. C. Hill, H. G. Tower, H. Beamish, A. E. Colman, T. H. Drury, J. Cobb, M. Turner, E. P. Lane, W. M. Morris, J. R. H. Baker, G. Robson.

Solo: W. M. Morris, H. Tipper. "A" Pilots: R. D. Bednell, R. L. Jackson, E. D. Wynn, J. Rowley, S. H. Smith, W. Swann, E. J. Brighton, G. Robson, C. W. Fellowes, A. Ellison.

Passengers: M. Turner, L. V. Mann, J. H. Moore, Mrs. Harley, S. Rowe, F. J. Powell, Mrs. Ellison, G. P. Haylock.

Mr. S. G. Hall was launched solo on Saturday, which he satisfactorily performed.

"Wulfrun" the New "X" Moth, presented to the Club by Messrs. J. D. and N. D. Graham of Wolverhampton, was flown over on Monday from Stag Lane by Flight-Lieut. Rose, and has been in great demand all the week.

Air Vice-Marshal Sir W. Sefton Branker visited the Aerodrome in "DCA" on Sunday, the 13th inst., and carried out an inspection of the Club.

This week has been thoroughly satisfactory in every way, a new club record of over 40 flying hours having been set up.

THE HAMPSHIRE AEROPLANE CLUB PAGEANT.—The Club will be represented by Flight-Lieut. Rose, on E.B.L.T., and Mr. R. G. Cavalet on his Widgeon "RM."

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending May 6.—Total flying, 20 hrs. 55 mins. Instruction, 3 hrs. 15 mins. Solo, 30 mins. "A" Pilots, 12 hrs. 35 mins. Tests, 1 hr. 15 mins. Passengers, 3 hrs. 20 mins.

Instruction with Mr. Parkinson, Messrs. Redshaw, Hayton, L. Middleton, Cochrane-Carr.

Solo, Dr. Alderson. "A" pilots: Mrs. Heslop, Messrs. Turnbull, Runciman, Stobie, Irving, Stewart, R. N. Thompson, A. Bell.

Passengers.—With Mr. J. D. Irving: Mr. A. Bell. With Mrs. Heslop: Mr. C. Thompson. With Mr. R. N. Thompson: Mr. Turnbull. With Mr. Parkinson: Miss Gibson. With Mr. A. Bell: Miss Klyver.

A member carrying out his height tests had reached about 6,500 ft.



AIR POST SOUVENIR: During his recent flight from England to Australia in the Avro "Avian" with Mrs. Keith Miller, Capt. Lancaster carried a small air mail between Calcutta and Rangoon. Here is a photograph of the envelope containing one of the letters addressed to a Mr. C. Lane at Rangoon.



"FLIGHT" Photograph

NEW CLUB INSTRUCTOR: When the Norfolk and Norwich Aero Club's pilot instructor, Capt. Lines, left them some time ago to join an aviation company, Mr. F. Fry, photographed above, beside a D.H. "Moth" at the Mousehold aerodrome, was chosen to fill the vacancy. He is an excellent instructor and has been a Sergeant Pilot in the R.A.F.

Among the spectators were the candidate's parents, and his mother remarked that he appeared to be very high. A pilot standing near mentioned that the pupil had gone to Heaven, and that his parents would never see him again, when his mother replied in a surprised tone, "Where do you expect father and I to go?"

REPORT for week ending May 13.—Total time, 23 hrs. 55 mins. Instruction, 5 hrs. 45 mins. Solo, nil. "A" pilots, 16 hrs. 30 mins. Passengers, 35 mins. Tests, 1 hr. 05 mins.

Instruction.—Messrs. Cochran-Carr, Griffiths, Runciman, Redshaw, Jones, Fairless, Wilson, Lawson, Lloyd-Browne.

"A" pilots.—Mrs. Heslop, Messrs. Stewart, P. F. Heppell, Stobie, H. Ellis, De Pledge, Turnbull, Lloyd Browne, Runciman, C. Thompson, R. N. Thompson, Horn, J. Irving, Wilson.

Mr. Norman Jones called at the aerodrome on Thursday, on his Moth, "Camberwell Beauty," for lunch and petrol.

Q.V. came back on to service after overhaul or renewal of C. of A., and Mr. Brown promptly took L.X. off service for top overhaul of engine. Engineers appear to take a delight in taking machines off service on every possible pretext. We suppose it is for the best, but why do they always choose fine week-ends for the work?

NORFOLK & NORWICH AERO CLUB

REPORT for week ending May 12. Total flying time, 11 hrs. 30 mins. Instruction with Mr. Fry: Messrs. A. A. Rice, C. Bougret, A. Wade, G. Barker.

Soloists: Messrs. H. Pank, R. Potter, A. A. Rice, G. Barker, R. T. Harmer, G. Surtees, H. Mack, F. Gough.

Passengers: 8.
Sir Samuel Hoare visited the club on Saturday, arriving in a Bristol "Fighter" fitted with that splendid device, "slotted wings." Sir Samuel was very pleased with the progress of the club, and after his inspection and tea in the club house, left for his Norfolk home.

The club has a membership of 308 in less than 12 months. That is progress, and still we are not closing the books. There is plenty of room for more and we are going all out after them.

Great interest is shown locally in the forthcoming visit of H.R.H. The Prince of Wales, and our members are coming up in their hundreds on that day.

NOTTINGHAM AERO CLUB

REPORT for two weeks' ending May 4 and 11. Total flying time, 25 hrs. 30 mins. Dual, 13 hrs. 15 mins.; solo "A" 1 hr. 40 mins.; solo (under instruction), 4 hrs. 15 mins.; passenger, 5 hrs. 20 mins.; tests, 1 hr.

Passengers (with Mr. Martin): Miss McKay, Messrs. Dennis and Harris. (With Mr. C. Cox): Miss Overton.

Dual Instruction with Mr. Martin: Messrs. Pratt, Hancock, Fanshawe, Calladine, Glenn, Bradley, McWilliam, Walter, Moore, Selvey, Lucas, Austin, Green and Dawson.

Solo "A" Licence: Messrs. Blake, Sands, Cox, and R. Granger.

Solo under instruction: Messrs. Bradley, Pilgrim, Ashworth and Austin.

Congratulations to Messrs. Bradley and Austin who both put up real good shows on their first solo. Also to Harold Ashworth on completing his tests for the R.A.C. ticket. Unfortunately, the club is now at a complete standstill owing to both our machines being out of action. Our instructor had the misfortune to have the engine of SK break up during the races at Filton, and since then QW has had to be put out of commission.

SOUTHERN AERO CLUB

REPORT for week ending May 6.—Total flying for week, 24 hrs. G.E.A.J.U. Dual, 4 1/2 hrs.; solo, 6 hrs. G.E.B.V.A. Dual, 4 hrs.; solo, 5 hrs. Passenger flying, 5 hrs.

On Wednesday last, May 2, Messrs. Miles and Bellairs flew to Croydon to the opening of the new buildings, on B.V.A., Mr. Bellairs new Avian. Mr. Miles gave flights to several distinguished personages, including Mrs. Hilton Philipson, M.P.

On Sunday, Mr. Fred Raynham, who is quartered with us for a few weeks, gave a thrilling demonstration of bursting balloons attached with string to a pylon with his wing tips, and later Mr. Miles tried his luck, and his balloon victims were quite in accordance with the high standard of Club work.

On Saturday next, May 19, our Flying Display takes place. A goodly number of people have promised to come and support us and the show should be extremely interesting. Among the machines which will be seen are the Avro 504K (Le Rhone), Gosport, Lynx and Avian, Blackburn Bluebird, Avro "Baby," Moth and S.E.5. The programme begins at 2.30 p.m., and the first event is a parade and fly past of aircraft taking part. An instructors'

obstacle race, in which the victims have to run to the middle of the aerodrome and don various garments before starting up their Avros and flying a circuit, should cause some amusement. A demonstration of a slotted Moth will be given, and will be followed by a balloon-bursting competition.

Various wing-walking and stunting displays will be given, and there will be a folding competition between the light aeroplanes. A taxi-ing competition is the next item, after which there will be a height-judging contest for the spectators. The grand finale will be the bombing and complete destruction of a native citadel, a most realistic looking affair of aluminium covered fabric, and so on.

Several handsome prizes are being awarded, amongst these being silver cups, one of which is being presented by Mr. F. P. Raynham, in addition to propeller clocks and other useful utensils.

We hope to attract a large crowd by this novel programme.

SUFFOLK AND EASTERN COUNTIES AEROPLANE CLUB

REPORT for week ending May 12.—Flying time, 11 hrs. 35 mins. Instruction: 5 hrs. 40 mins.; "A" and "B" pilots: 2 hrs. 45 mins.; Soloists: 1 hr. 35 mins. Passenger flights: 1 hr. 20 mins.; Tests, 15 mins.

Dual Instruction:—(With Mr. Lowdell: Dr. Dunn, Miss Edwards, Miss Rhodes, Dr. Mildred Yate, Messrs. G. Smith, F. Verney and G. Goodwin.

"A" and "B" pilots solo:—Mr. C. N. Prentice, Dr. J. C. Sleight, and Mr. S. Schofield. Solo under instruction: Miss Edwards, Messrs. R. Brown, C. Hanson, G. Smith and F. Verney.

Passengers.—With Mr. Lowdell, 4; with Mr. Prentice, 5.

Mr. Geoffrey Smith made a successful first solo during the week.

Mr. R. Brown has received his R.Ae.C. Certificate, but is still awaiting the receipt of his "A" licence from the Air Ministry.

High winds and rain prevented flying on Tuesday and Wednesday, as most of our members now under instruction are now at the solo period prior to going for their "A" licence test.

The club will be closed for the Whitsun holidays from Friday, May 25, to Tuesday, May 29. During this period the whole of the fleet, the staff and many of the members will take up their abode at Hamble to participate in the Hampshire Air Pageant.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending May 5.—Flying time, 38 hrs. 45 mins. Instruction 12 hrs. 25 mins. Soloists, 23 hrs. 50 mins. Passengers, 2 hrs. 30 mins.

Instruction (with Captain Beck): Messrs. Ambler, Bamford, Batcock, Bell, Blackburn, Collins, A. Crowther, Dr. Daly, Messrs. Dane, Ellison, Hepworth, M. B. Lax, Rowley, Senior, Shires, Sugden, Watson, Miss Woodhead.

Soloists: Messrs. Ambler, A. Crowther, H. Crowther, Dick, Humphries.

"A" Pilots: Messrs. Clayton, Dawson, Ellison, Lister, Mann, Thomson, Watson, Wood.

"B" pilot: Mr. Fielden. Passengers, 12.

Another cheerful week to record, our only drawback being that we had only two machines. We are hoping to get a third, bringing us up to establishment during the week.

Mr. Harry Crowther and Mr. Geoffrey Ambler did their "A" licence tests with admirable skill, and given the continuance of "height test" weather, we shall have two more in the course of a day or two.

REPORT for week ending May 12.—Flying time 30 hrs. 25 mins. Instruction, 9 hrs. 35 mins.; soloists, 19 hrs. 20 mins.; passengers, 1 hr. 30 mins.

Instruction.—With Captain Beck: Messrs. Batcock, Bell, Blackburn, Crowther A., Dr. Daly, Messrs. Gill, Hepworth, Ives, Lax, R., Ostler, Reynolds, Rhodes, Rowley, Senior, A., Senior, G., Shires, Sugden, Swift, Miss Wilson.

Soloists.—Messrs. Birch, Dick, Crowther, A.

"A" Pilots.—Messrs. Ambler, Atcherley R., Clayton, Crowther, H., Dawson, Ellison, Humphries, Lax, R., Lister, Norway, Thomson, Watson, Wilson, Wood.

"B" pilots.—Messrs. Fielden, Jones, Parkinson. Passengers, 9.

Another "A" licence test was successfully accomplished this week by Mr. Reg. Humphries. Although on the first attempt he took the mark near which he had to land to be outside the clubhouse door instead of the centre of the aerodrome, his final effort was very pleasing.

Our hours have been somewhat curtailed this week due to TA tapping itself against a post in the failing light, damaging under-carriage, propeller, etc., and also to the absence during almost the entire week of our friend Mr. Stewart Dick, who has now transferred his actions from the (V) olga front and is carrying on his attack on the Marne (y).

Today we are anticipating a visit by air from Sir Sefton Brancker.

FROM THE FLYING SCHOOLS

The De Havilland Flying School, Stag Lane Aerodrome

REPORT for week ending May 13.—Total flying time, 145 hrs. 55 mins. Instruction: Dual, 45 hrs. 20 mins.; solo, 76 hrs. 50 mins. Other flying 23 hrs. 45 mins.

Four pupils successfully accomplished first solo flights during the week, and three others, including Miss W. E. Spooner, passed their night-flying tests for "B" licences.

Ten new "Moths" were tested and despatched to their various destinations.

Experiments with the "slotted wings" have been so far advanced, that a "Moth" fitted with this "fool-proof" device, has been flown to the Continent by Squadron-Leader England, where he will give demonstrations in many countries.

On Saturday we were all taken by surprise at the unexpected appearance at Stag Lane of Lieut. R. R. Bentley, who has flown his "Moth" back from South Africa. We extend our heartiest congratulations to him on the successful conclusion of a brilliant flight.

Henderson Flying School, Ltd., Brooklands Aerodrome.

REPORT for week ending May 10.—Total flying time, 35 hrs. 30 mins.

Dual.—With Col. G. L. P. Henderson: Miss Kidstone, Messrs. Brooks, Bellville and Dr. Forsyth. With Mr. H. D. Davis: Messrs. Quilter, Fowler, Hsiao, Oliver, Hughes, Hamilton, Dr. Forsyth, Dr. Wall. With Mr. A. E. Golds: Messrs. Nunn, Oliver, Van Gessel, Dr. Forsyth.

Solo.—Messrs. Whiteley, Patton-Bethune, Dr. Wall, Anderson, Hughes, Hsiao, Allen, Hamilton.

Mr. Hamilton has passed all his tests for his "A" licence, and as he has only been given 6 hrs. 30 mins. dual, the case is worthy of note.

Mr. Hsiao has passed all his tests, and as he had considerable difficulty at first, we would like to congratulate him on a very fine show of piloting.

Mr. Hughes is now ready for his height test and several other pupils are almost ready for solo.

AN INTERESTING NEW PARACHUTE

The Russell "Lobe" Type

THE parachute today is an accepted part of aviation equipment. As a safety measure it has an importance equal to that of the ship's lifebelt. Possibly it can be regarded as more effective, for in most cases of emergency the parachute does bring its passenger to definite safety, whilst when the lifebelt has completed its function, the passenger has still to be rescued. Such a degree of reliability has the parachute achieved that parachuting is a common entertainment at air meetings.

As a practice it is not widely known in this country, because it is almost entirely followed by our Royal Air Force. The public's experience is practically confined to witnessing Miss June performing her successful jumps at our air meetings and the wholesale descent of Air Force men at the Hendon Pageant. It is not, perhaps, realised that parachuting is a regular part of the training of the Royal Air Force. There is a Flight devoted to instruction and experimenting. Part of its daily routine is spent in making delayed drops for thousands of feet to test the effect in such emergency conditions as often occur in the normal duties of the Air Force. These obscure experts have a knowledge of the parachute which is probably unequalled.

A new parachute has been introduced to this country. It is called the Russell "Lobe" Parachute. The manufacturers state that it is now in general use on the air mail lines on the Pacific Coast, and that four lives were saved last year by it in cases of emergency. Tests have been conducted by the United States Government, and an extract

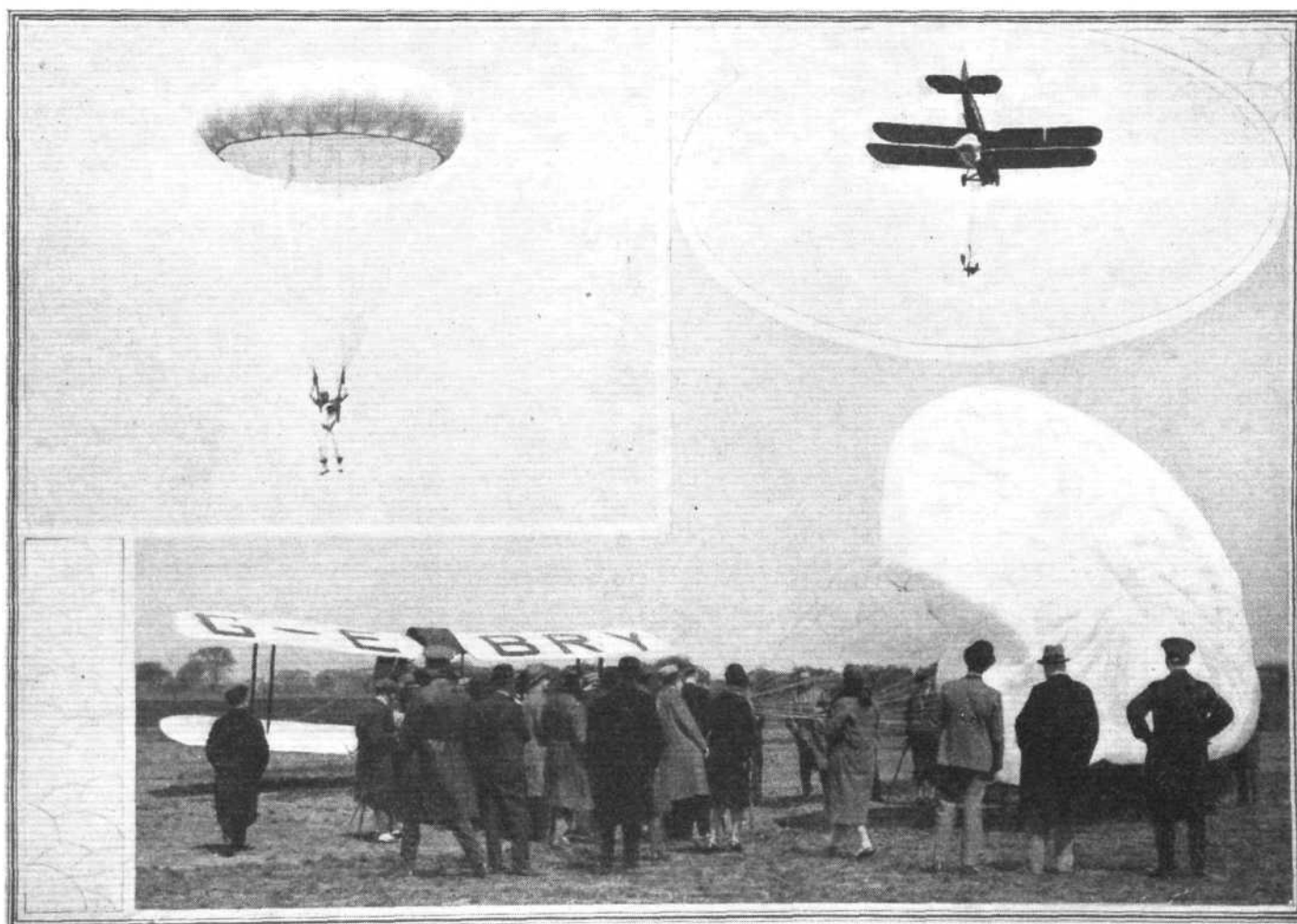
from its report is stated to be as follows:—"The Russell parachute was then dropped from an altitude of one hundred feet to ascertain whether or not it would open from that altitude. This parachute is surprisingly fast in opening and checks the descent of the dummy very suddenly."

It was designed by Mr. J. M. Russell, the Russell Parachute Company's engineer, who was employed by the U.S. Army Air Service Engineering Division as parachute engineer during the developments carried out for their Government from 1919 to 1924.

Primarily, it was designed for military purposes, the manufacturers state, and the lobe canopy, which is the distinctive feature, gives rapid opening under fouled conditions, besides a rapid opening without excessive shock load, maximum skirt extension under all air and load conditions, and automatic compensation for load within body weight limits, assuring safe descent for abnormally slight and heavy persons.

Also, other claims are that oscillation or swinging is reduced to a minimum, assuring safety on landing; ease of control during descent with means provided for partial collapsing and hastening of descent, which decreases drift and allows for avoiding danger from above. Finally, this parachute is said to operate safely at 100 ft.; give an excellent performance when packed by inexperienced people; is 100 per cent. manually operated, and may be safely used by those inexperienced at parachuting.

This company produces both silk and cotton parachutes,



["FLIGHT" Photographs]

A NEW PARACHUTE : The distinctive shape of the Russell "Lobe" Parachute is clearly noticed in the left picture, showing the descent of Mr. John Tranum at the Stag Lane demonstration on May 10. Inset, reveals the rapid opening after he left the D.H.9 at 1,000 ft.; and below, the D.H. "Moth" was, as usual, ready to assist by providing a "wind" to open the parachute on the ground. In the group are Air Ministry representatives and other experts. Behind the cords and hatless is Mr. C. A. Pike, who piloted the D.H.9 for the occasion. Miss June, the well-known parachutist, is on the left facing the camera.

and conforms to the United States Government specifications. Their silk fabric is specially woven of imported material of high tensile strength and light weight. The cords, of which there are twenty-four to each parachute, are woven of high quality silk, each having a tensile strength of 400 lb. It is said that they do not exhibit picked threads after usage.

The silk type is recommended by the company for use with any class of aircraft and particularly for machines with a high speed performance where severe usage is demanded. With the cotton type, the material is of light weight, yet with a high tensile strength and specially woven to meet the official conditions. A 250-lb. tensile strength is credited the silk cord used with the cotton parachute, and it is durable. The latter is recommended with slower types of aeroplanes, such as those used for bombing, photography, observation, training, and commercial purposes.

In America the prices quoted for the Russell products are 350 dollars for the silk type and 250 dollars for the cotton type, each complete with carrying bag.

Unless otherwise ordered, the seat pack type is always furnished. Back packs and special packs are manufactured to meet special conditions. Each sort is entirely manually operated, a jerk on a large release ring freeing the parachute and also ejecting it from the pack. There are no elastics, springs or pilot parachutes involved.

Packs are made of 12-oz. double-fill O.D. duck, with .080 music wire pins. Joints are wrapped, soldered and tested, and the rip cord rings are made of seamless steel tubing, cadmium plated, and are 4 in. in diameter. Ring and rip cord are so arranged that it is practically impossible to rip the pack other than by actually manually pulling the ring after it has been removed from its pocket.

The harness can be worn loosely and comfortably whilst flying, as it automatically tightens when the wearer stands. It is made of woven 3-ply linen web having a tensile strength of 2,750 lb. All hardware is dropped forged, nickel steel, cadmium plated to prevent rust, and is stated to be tested to 2,500-lb. load before used in construction. Total weight of the Russell "Lobe" parachute, harness and pack is 19. lb.

Demonstration

At Stag Lane Aerodrome, Edgware, a demonstration of the Russell parachutes took place on May 10. Mr. H. R. McClintock, the General Manager, recently landed from America with an exhibition jumper, Mr. John Tranum. The

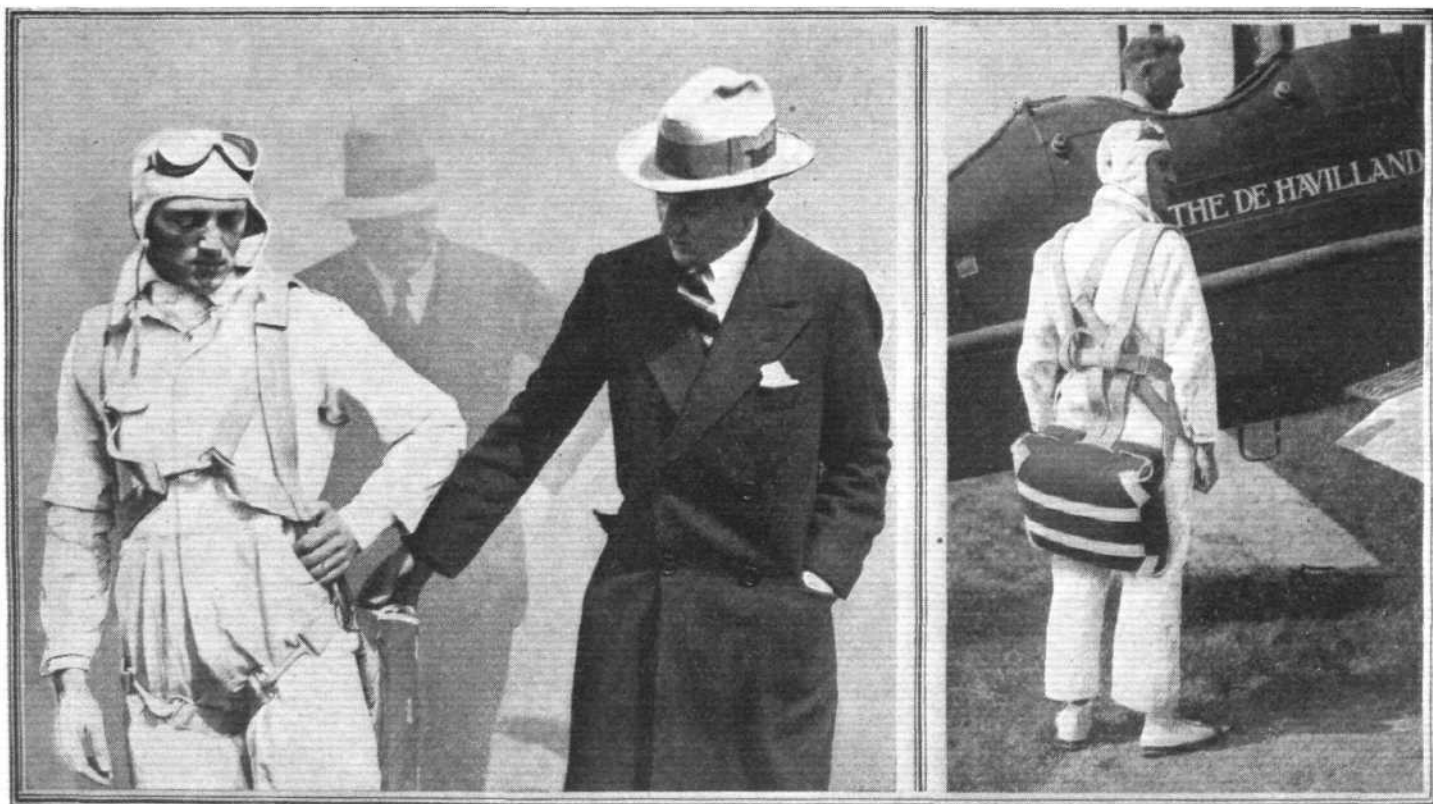
latter, familiarly called "John," speaks like an American, but is actually a Dane. He made three successful jumps at Stag Lane before representatives of the Air Ministry and the press. Picturesquely and suitably dressed in clean white overalls, rubber boots, tight-fitting flying helmet and goggles, he went up in fair clear weather in a D.H.9, piloted by Mr. C. A. Pike, one of the De Havilland School instructors. He dropped from 1,000 ft. in a silk seat type, which seemed to spread its lobe white canopy very quickly and bring "John" down very straight in a corner of the aerodrome. On the second occasion he again jumped from 1,000 ft., but with a cotton parachute. On each occasion, after the brief effect of the sudden opening, the descent looked very straight or had the minimum of swing. The landings seemed fast, but that was possibly because one has not witnessed many parachute landings. "John" pulled the cords attached to the centre of the canopy immediately he touched the ground and the parachute instantly collapsed, thus preventing any dragging along the ground.

His third descent was not quite carried out according to the programme, for which he could not be blamed. He proposed to drop from 3,500 ft., and not open the silk parachute until he had fallen 2,000 ft. He was using a back pack, which is most convenient for moving about in a machine, such as gunners and observers have to do. As the D.H.9 flew steadily across the aerodrome going away from the buildings the spectators could observe the preparatory movements of "John", but it was a second or two after he had fallen that one could discern his bent white figure against a distant blue sky. The white canopy then suddenly shot out to its full diameter much before it was expected and everyone naturally wondered why.

Experts among the spectators immediately advanced the theory that "John's" goggles, which were not his own and had been borrowed for the occasion, had slipped over the back of his head, so that water had blinded his unprotected eyes. Therefore he had naturally, in conditions which were not comfortable and possibly not safe, pulled the ring after falling only 800 to 1,000 ft.

This theory was magically true as "John," after landing with remarkable accuracy in the same spot as twice before, apologetically explained. He was unnecessarily penitent, too, and declared his intention of performing the promised demonstration if he could borrow a pair of suitable goggles. Whilst

(Concluded on page 373)



["FLIGHT" Photographs

PARACHUTE DISPLAY AT STAG LANE AERODROME.—In both pictures is Mr. John Tranum, an exhibition jumper, with the American parachute known as the Russell "Lobe" Parachute, with which he made three descents at Stag Lane on May 10. The 4-in. diameter ring, which is pulled after the jumper is clear of the machine, is indicated in the left picture by Mr. R. H. McClintock, the general manager of the Russell Parachute Company. The machine is the D.H.9 from which the demonstration was given.

AIRISMS FROM THE FOUR WINDS



African Survey Flight

SIR ALAN COBHAM resumed his African survey flight in the Short "Singapore," on May 15, and reached Freetown. With Lady Cobham, he is staying at the Government House. This stage started from the Fresco Lagoons on the Ivory Coast, and the coast was followed to Liberia, and then to the capital, Monrovia. The distance covered to Freetown was 600 miles.

Great Flying-Boat Cruise

THE four R.A.F. "Southampton" flying-boats engaged on the Far East Cruise are expected to resume from Singapore on May 21. They have been overhauled there after the successful flight from England.

Lady Heath's Return

In her Avro "Avian" (Cirrus) Lady Heath continued her flight towards England from Rome on May 14 and reached Marseilles about seven hours later. The next stage was to Dijon on May 15.

Cape Town-England Flight Mishap

LADY BAILEY started her return flight towards England from Cape Town on May 12, but had to make a forced landing at Humansdorp and apparently had the misfortune to damage her D.H. "Moth" (Cirrus). Fortunately she was uninjured.

Nairobi-England Flight

SIR PYERS MOSTYN is flying Mr. J. Carberry's Fokker "Universal" monoplane, fitted with Wright "Whirlwind" engine, from Nairobi to England. He is accompanied by two Germans, and reached Constantinople on May 9. He cabled to Shell-Mex, Ltd., that he "found Shell lubricating most economical and efficient and Shell benzine perfect as ever."

That North African Coast

WING-COMMANDER J. R. W. SMYTH-PIGGOTT's air tour of the French Air Units in North Africa by D.H. "Moth" is reported to have ended at Affreville, 80 miles west of Algiers on May 9, owing to damage to the machine during a forced landing. The pilot, who started his flight from Eastchurch, on April 28, was unhurt. The North African coast seems ill-fated to many of the light 'plane tourists. Wing-Commander Manning has also come to grief there, and Lady Heath seemed to meet a few troubles in that part of the world.

Newspaper Air Tour

THE *Daily News* and *Westminster Gazette* air tour in Europe and North Africa ended at Croydon, on May 8, when Capt. Stack and Mr. Bowyer landed in the Avro "Avian" (Cirrus) after covering 4,250 miles since April 20. The total flying time was 57 hours and fuel and oil costs amounted to £31 and £3 13s. 8d. respectively. Insurance of the machine for the tour amounted to £42, and, in the event of a claim, a further payment of £30 was asked. Actual air travel expenses amounted to £46 18s.

Mr. Van Lear Black's Air Tour

MR. VAN LEAR BLACK left Croydon, on May 14, for Cape Town in the Fokker-Bristol "Titan" monoplane with two pilots, engineer and valet. The arrival at Geneva was reported at 11.35 a.m. and an hour later he left for Venice. On May 15 he landed at Brindisi, from Venice, to refuel.

Italian Service Adventure

THE Italian Air Force machines flying to Italian Somaliland encountered a storm near Mongalla, May 12, and made a forced landing after seven hours' flying. One machine suffered a damaged propeller. Another flew to Mongalla for assistance.

Secret Flight Disaster

WE reported in our columns last week the attempt of Lieut. Royal Thomas to beat the endurance record in America. He has since been killed with a mechanic, Mr. Westervelt, when their Bellanca monoplane crashed during a speed trial, on May 9. It was disclosed that the flight was a test in preparation for a secret flight to Rome shortly.

"Bremen" to be Rescued

THE "Bremen" monoplane which recently made the first heavier-than-air east to west crossing of the Atlantic is

to be salvaged from Greenly Island by co-operation between the United States and the Junkers Company. Two Loening Amphibians left Washington on May 11 and flew to New York to embark Mr. F. Melchior, Junkers' chief pilot in America. They then flew to St. John's, Newfoundland. Mr. Melchior will descend on Greenly Island by parachute if an aircraft landing is not possible. He will then try to fly the "Bremen" back to New York.

The Paris-Tokio Flight

CAPT. PELLETIER D'OISY, who left Paris for Tokio, on May 8, in a Potez 29 biplane, reached Bucharest on May 9, having made an intermediate landing at Arad, 310 miles, owing to bad weather. He flew on the next day against a head wind and arrived at Aleppo in nine hours. Basra was the next stage. He was reported to have flown from Karachi to Allahabad on May 13, and reached Calcutta on May 14. The machine is fitted with a Lorraine 470 h.p. engine.

The Arctic Explorers

CAPT. WILKINS and Lieut. Eielson, the Arctic airmen, left Green Harbour, Spitzbergen, on May 10, and flew to Advent Bay, a distance of 15 miles. With their machine, the Lockheed "Vega," in which they crossed the Arctic circle some weeks ago, they embarked on board the *Hobby* and sailed for Tromso, expecting to reach Oslo on May 24, where the Norwegians will receive them with honours. Their plans include flying to Berlin about June 1, and also visiting Antwerp before visiting London. They will finally return to America and deliver a short series of lectures.

Italian Polar Expedition

GENERAL NOBILE left King's Bay, Spitzbergen, in the Airship, *Italia*, on May 11, with the intention of reaching and exploring Nicholas II. Land. It was expected that it would be 40 hours before he returned, for the distance was 900 miles each way, and some time was to be spent on the land. The airship was, however, forced to return in the afternoon, owing to fog, and later, during a trial flight, it bumped the ground hard and damaged an engine.

New Air Line Opened

ON May 14, a new air route was officially inaugurated by the "Sabena," the Belgian Air Transport Company, at Antwerp. It will link Cologne, Brussels and Antwerp, and is subsidised by Antwerp City with £2,200.

Airship Lands on Ship

THE U.S. Army airship, TC5, landed on the deck of the Steamer, *American Trader*, when it was two hours out of New York, on May 10. It took off again later with equal success and returned to New York with a representative of the U.S. Shipping Board.

Air Crash in Japan

THE largest passenger machine in Japan, constructed by the Department of Communications, crashed on May 4 during a test flight. The pilot and seven passengers, most of whom were mechanics, were killed.

Twenty Years Ago!

Extract from "The Auto." (Precursor of "Flight"), May 16, 1908.

"Farman Pere et Fils en Aeroplane.—Unlike the pioneer motorist with his car, the aviator of today is hardly as yet in a position to thrill his friends by inviting them to participate in his flights, but Mr. Farman, who has himself been a passenger on the Delagrangre aeroplane, has now achieved the success of carrying two on his own machine. On the occasion in question, which was on Saturday evening of last week, Mr. Farman's father was a passenger on the aeroplane during a flight of from 150 to 200 yards."

"The British Army Aeroplane.—The greatest secrecy is still maintained around the aeroplane which has been constructed at Aldershot, and up to the present time no reliable information is available on the subject. Recently, however, the machine was removed from the shed which it occupied with 'Nulli Secundus' to a home of its own, the 'fitting' being accomplished at an early hour of the morning in order to avoid too much outside attention."

AERO INSTRUMENTS AND AIRCRAFT DEVELOPMENT

WHEN recording the development and performance of aircraft, full recognition has not, perhaps, been given to the work of the scientific instrument maker and his share in this development. During recent years notable advancement has been made in the science of control and navigation of aircraft, but no matter how perfect the machines and engines may have been—and in no way depreciating their performance—it may truly be said that many of the great flights accomplished in the past would have been impracticable without the aid of absolutely reliable and accurate instruments.

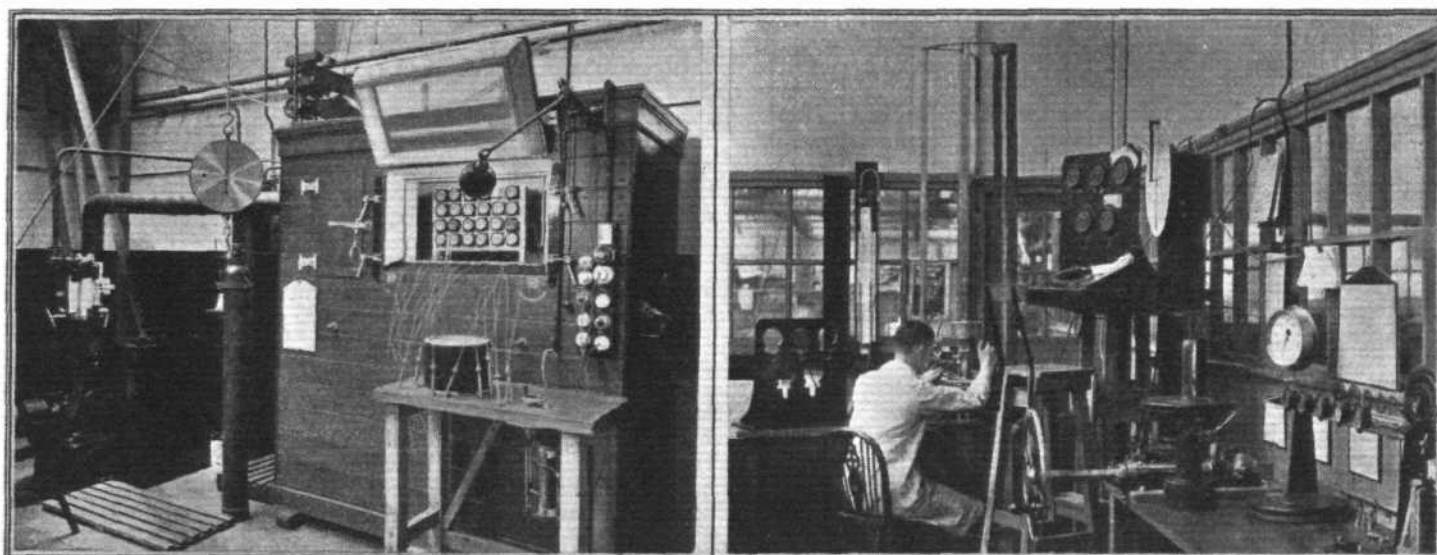
As pioneers in the design and manufacture of aeronautical instruments and accessories, the firm of S. Smith and Sons, of Cricklewood, have undoubtedly played an important part in the development of aviation, and, especially in regard to the extension of flying to the Antipodes, they hold a unique position.

The historic flight from England to Australia successfully accomplished over eight years ago by the late Sir Ross Smith, K.B.E., and his brother Keith, was carried out on a Vickers "Vimy" biplane fitted with two Rolls-Royce engines, and this machine was fully equipped with "Smiths" instruments—and "K.L.G." plugs were, of course, fitted to the

1926, and no better proof of the reliability of "Smith's" instruments is necessary when we learn that the same de Havilland 50-J machine did the double trip of 44,000 miles to and from Cape Town and Australia with the same set of "Smith's" instruments.

Considering the extraordinary strain imposed on the equipment, and the wide range of climatic conditions in which it had to operate, it is a matter of congratulation to all concerned with its manufacture to be assured by Sir Alan Cobham, upon his return, that the whole of the equipment had functioned perfectly, and there was not a criticism to offer. This was confirmed by a letter in which Sir Alan stated:—"On the completion of our flight from England to Australia and back, I want to tell you that all your products that were fitted on the de Havilland 50-J seaplane operated perfectly without fault. Our instruments never gave us a moment's anxiety, and we never had the suggestion of a falter with our "K.L.G." plugs; and I believe that the Hughes' Aperiodic Compass is undoubtedly the finest in the world, and that despite the varying altitudes in going to the Antipodes, we had no trouble with the compass whatsoever.

Coming to a more recent period, we have further evidence



INSPECTING AND TESTING "SMITH'S" INSTRUMENTS: The reputation for reliability of "Smith's" Instruments is largely due to the thorough inspection and testing carried out at the Cricklewood Works. On the left is the "Cold Test" plant, which enables instruments to be tested down to -40° Centigrade. On the right is a section of the Inspection Department, showing some of the elaborate testing apparatus.

engines, these plugs being one of the "outside" components handled by "Smiths."

The next important flight towards Australia was the one to Rangoon and back undertaken in the winter of 1924 by then Mr. Alan Cobham, accompanied by Sir Sefton Brancker, K.B.E., Director of Civil Aviation, and we recall that we commented on this flight at the time in regard to "... the various instruments which helped the pilot to carry on and maintain law and order. These were, naturally, supplied by Messrs. S. Smith and Sons (M.A.), Ltd., of Cricklewood. These have, by now, come to be a standard fitting as a matter of course in nearly every big aviation event. . . ." Then, in connection with the very important matter of sparking plugs, in this same flight, the following telegram tells its own story:—"Nearing finish 17,000 miles' flight survey through Iraq, India to Rangoon and back, throughout flight done with de Havilland type fifty aeroplane and Siddeley engine we have used same two sets K.L.G. plugs and during rain or heat plug trouble has been unknown to us. Certainly I can ask for no better plug. Alan Cobham."

This flight, it will be remembered, was arranged in order to survey the route to India with a view to establishing a regular air service along the route. This service was, as we know, eventually inaugurated, and when the five triple-engined de Havilland machines were built for this purpose the "Smith's" equipment was specified by Imperial Airways, Ltd.

A similar story may be told in regard to Sir Alan Cobham's 28,000 miles' flight to and from Australia, accomplished in

of the worth of this firm's productions in the fact that they were used by "Bert" Hinkler, Capt. Lancaster, and Mrs. Keith Miller in their Avro "Avian-Cirrus" machines on their Australian flights, and are at present being employed by Wing-Comdr. Manning in his present Australian effort in a Westland "Widgeon."

As regards "Smith" instruments themselves, we think they are too well known to need a description here (we have frequently done so previously in pages of *FLIGHT*), but we would mention that in the course of producing many thousands of instruments, Smiths have developed several "gadgets for the aero dashboard" that possess certain important and original features. Their altimeters, air-speed indicators, rev.-counters, all claim distinctive characteristics, while much experimenting has resulted in a successful gyro turn-indicator.

It is the refinement of detail, the high standard of workmanship—the works at Cricklewood are one of the finest we have seen—and the careful and thorough research work (see the accompanying illustrations of two sections of Smith's Testing and Checking Department) devoted to the production of Smith's instruments that have resulted in the world-wide reputation they enjoy.

In conclusion, therefore, we think it cannot be disputed that the scientific instrument maker is a very important factor in the continued development of aviation, and it is good to learn that a section of the excellent organisation of this well-known firm of S. Smith and Sons is devoted to the requirements of the aircraft industry.

THE ROYAL AIR FORCE

London Gazette, May 1, 1928.

General Duties Branch

The following are granted short-service commns. as Pilot Officers on probation, with effect from dates indicated, and with seniority of April 13:—F. R. Balfour, C. G. Davies (April 18); E. L. Johnstone (April 19); M. N. Oxford (April 20).

Wing Commander A. J. Miley, O.B.E., ceases to be seconded for duty with the Chilean Navy (April 1).

Stores Branch

Flying Officer M. H. Jenks is granted a permanent commn. in this rank with effect from May 30, 1927, on completion of probationary service; Pilot Officer on probation P. H. Wilcox is confirmed in rank and promoted to rank of Flying Officer, with effect from Oct. 30, 1927, and with seniority of Oct. 9, 1927.

Accountant Branch

Flying Officer G. R. Keep is transferred to Reserve, Class C (April 28).

Medical Branch

Flight Lt. T. K. Place is promoted to rank of Squadron Leader (Dental) on promotion to Major in the Army Dental Corps (April 4) (substituted for *Gazette*, April 24).

Legal Branch

Flight Lt. G. S. Marshall, O.B.E., is granted a permanent commn. in this rank (May 2).

RESERVE OF AIR FORCE OFFICERS**General Duties Branch**

Flying Officer J. C. Jeffrey, M.C., is employed with the Regular Air Force for a period of two years (April 16). The following are granted commns. in Class AA as Pilot Officers on probation (April 16):—S. A. Adams, T. G. Jones, W. R. Walwin.

Pilot Officer R. S. Munday is promoted to rank of Flying Officer (March 1). The following Pilot Officers on probation are confirmed in rank:—R. P. S. Taylor (April 27); J. P. Rae (April 28).

Flying Officer F. T. Courtney relinquishes his commn. on completion of service (April 20).

Medical Branch

F. G. Mogg, M.R.C.S., L.R.C.P., is granted a commn. Class DD as a Flying Officer (May 1).

AUXILIARY AIR FORCE**General Duties Branch**

No. 602 City of Glasgow (Bombing) Squadron.—The following to be Pilot Officer:—A. D. McNab (April 12).

London Gazette, May 8, 1928

General Duties Branch

E. C. T. Edwards is granted a permanent commn. in rank of Pilot Officer with effect from April 30, 1928, and with seniority of April 30, 1927.

The follg. Pilot Officers are promoted to rank of Flying Officer, with effect from dates indicated:—N. W. K. Seeman (Jan. 17), F. H. L. Searl (April 2), L. Newcombe (April 10).

The follg. Flying Officers are transferred to the Stores Branch on probation (April 28):—R. N. Hesketh, B. G. Pool. Flight Lt. E. O'D. Crean is placed on retired list at his own request (May 9). The follg. are transferred to Reserve, Class A:—Flying Officer F. A. Pumphrey, D.C.M. (May 4), Pilot Officer J. C. McE. Gibb (April 19).

F. H. G. Oliphant, Lt. R.N., Flying Officer, R.A.F., relinquishes his temp. commn. on return to Naval duty (Feb. 21); the short service commn. of Pilot Officer on probation K. I. F. C. Norman-Wright is terminated on cessation of duty (May 9).

Stores Branch

The follg. are granted permanent commns. as Pilot Officers on probation with effect from, and with seniority of, April 28:—G. Matthews, E. N. A. Crowe-Browne, M. J. Scott, L. F. Oldridge, A. W. Rule, J. S. French, E. J. H. Starling, P. Dennehy, J. W. Hunt, P. V. Edwards, H. E. Freeston, J. E. Reynolds, F. G. Lee.

Medical Branch

R. E. Alderson, M.B., is granted a short service commn. as Flying Officer for three years on Active List, with effect from, and with seniority of, May 1, and is seconded for duty with Victoria Infirmary, Newcastle-upon-Tyne, from that date; Flying Officer P. O'Callaghan resigns his short service commn. (May 2); Flight Lt. T. Sheehan relinquishes his temp. commn. on completion of service and is permitted to retain his rank (April 25).

RESERVE OF AIR FORCE OFFICERS**General Duties Branch**

The follg. are granted commns. in Class AA (ii) as Pilot Officers on probation:—J. M. Gittins, R. Pankhurst, M. H. Richardson, F. O. Tickell (April 23); G. H. Thevenard (April 24); G. M. Randall (April 25). Pilot Officer on probation H. Haigh is confirmed in rank (May 8). Pilot Officer G. B. Shillaker relinquishes his commn. on completion of service (May 5).

The follg. Flying Officers are transferred from Class A to Class C:—E. C. N. Jeffries (April 6); P. A. A. Boss (April 20).

AUXILIARY AIR FORCE**Medical Branch**

The follg. Flying Officer (Honorary Flight Lt.) to be Flight Lt.:—No. 600 CITY OF LONDON (BOMBING) SQUADRON.—N. P. Henderson, M.D. (April 6).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the R.A.F. are notified:—

General Duties Branch

Air Commodore T. C. R. Higgins, C.B., C.M.G., to No. 10 Group, H.Q. Lee-on-Solent, pending taking over command, 6.4.28.

Wing Commander R. B. Ward, A.F.C., to R.A.F. Depot, Uxbridge, 13.4.28.

Wing Commander R. B. Maycock, O.B.E., to R.A.F. Depot, Uxbridge, 26.4.28.

Flight Lieutenants: C. J. S. Dearlove, to R.A.F. Depot, Uxbridge, 23.3.28. H. V. Pendavis, D.S.O., to R.A.F. Depot, Uxbridge, 2.5.28. H. T. Lydford, A.F.C., to Fighting Area, H.Q. Uxbridge, 14.5.28. S. H. Ware, to R.A.F. Depot, Uxbridge, 31.3.28. D. D. A. Greig, D.F.C., to Marine Aircraft Experimental Estab., Felixstowe, 1.5.28.

NEW PARACHUTE—concluded from page 370.

a search was being made the beautiful silk parachute was opened on the ground for general inspection with the aid of the slipstream from a D.H. Moth as there was no wind at the time.

Suitable goggles were found but the company generally agreed that there was no need of a further demonstration as "John" had adequately fulfilled his task.

Miss June, who witnessed "John's" exhibition, accepted an invitation to make a descent, although we do not believe she had tried the Russell type before. It was found, however, that the official conditions under which the demonstration was held did not permit anyone to drop that day except "John."

Mr. McClintock stated that there had been no case of failure with the Russell parachutes in the course of two years' use. In one experiment with a cotton type a load of 480 lbs. had been tried from a machine travelling at 110 m.p.h. The parachute used by "John" on his third delayed drop was his own property, and he had dropped twenty-three times with it.

It was also mentioned that in face of twisted shroud lines, improper packing and other attempts at fouling the Russell "Loke" parachute had never failed to open and bring its load safely to earth. Among its prominent owners is Col. Charles Lindbergh.

Instructions for Descent

For descent in this parachute the wearer must make sure that the leg strap snaps and breast strap snap are fastened and the rip cord ring is in the pocket on the harness. The ring must not be pulled until one is clear of the machine and the pull should be vigorous, although a 10-lb. pull is all that is actually required. Perfect function occurs with a steady pull, but vigour insures maximum speed of operation. During the descent, to change the direction or lessen the drift one

or more of the lift webs on the side facing the desired direction should be pulled.

On making contact with land the knees should be bent under, and the cords to the centre of the canopy pulled to collapse it.

Packing and Maintenance

Repeated packing is not necessary, apparently. Russell parachutes used constantly for 90 days have been found efficient for an emergency. Inspection and repacking is recommended every 60 days. Inexperienced persons may correctly repack by stretching the parachute, shroud lines and harness on a table at full length in such a position that the harness is back up for the seat pack type, or front up for the back pack type of parachute. The cords must not be twisted through the harness. The two groups of cords close to the bottom of the parachute skirt are grasped and, by one standing on a table, the parachute is thoroughly shaken, causing the fabric to assume its natural fold or position. Next it is replaced on the table with all lines straight, and the bottom folded in pleats from either side into a bundle slightly larger than the width of the parachute pack, with cords to the centre. Then pack frame is folded back upon the harness so that the edge is within one foot of the rings to which cords are tied. Webbing is folded back, over pack frame and fastened with the provided strap.

The entire group of cords are then folded backwards and forwards across the pack frame and the latter and harness moved towards the canopy until all cords are in place, then flaps and straps provided are fastened over the cords. The pack frame is placed with narrow end towards canopy and parachute folded in pleats upon it. The entire assembly is inverted and by kneeling on the pack frame, the cover is fastened in position. Snapping a detachable cushion on the pack frame and placing the release ring in its pocket, and the parachute is then ready for use.

R.A.E.S. AND INST.AE.E.

Official Notice.

At a meeting of the Council, held on May 8, Colonel the Master of Sempill A.F.C., A.F.R.A.E.S., was unanimously elected President for the ensuing year, 1928-29. Air Vice-Marshal Sir Vyvyan K.C.B., D.S.O., was re-elected Vice-President, and Lt.-Colonel J. T. C. Moore-Brabazon, M.C., F.R.A.E.S., M.I.A.E.E., M.P., was elected an additional Vice-President.

The Master of Sempill, after serving some years on the Council of the Royal Aeronautical Society, was first unanimously elected Chairman of the Society for the year October 1926-27. His term of office was subsequently extended by the passing of a special rule so that continuity during the period of negotiations with the Institution of Aeronautical Engineers should be maintained, and so that the Society could continue to make use of the valuable services the Master of Sempill was rendering. In January, 1928, the amalgamated body came into full being with a completely revised set of rules, among which was one stating that a President should be appointed.

The Society has invited Capt. Wilkins, to deliver a lecture on his recent Polar Flight, and this the explorer has consented to do. This lecture will be given some time during June.

J. LAURENCE PRITCHARD, Secretary

AIR MINISTRY NOTICES

Reporting of Aircraft Flying on Regular Routes

It is hereby notified:—

The departure and arrival of aircraft operating a regular service in Great Britain, Belgium, France, Germany, Holland and Switzerland, is reported from aerodrome to aerodrome by wireless telegraphy; and other aircraft also when flying over a regular route may be similarly reported at the request of the pilot.

In order to prevent unnecessary enquiries when an aircraft whose departure has been reported fails to arrive at its destination it is essential that the pilot concerned should report news of a forced landing or change of destination. This report should be given by telephone without delay to the aerodrome of original destination or to the nearest aerodrome open to public air traffic (in England, Croydon or Lympne).

AIR PILOT.—Para. 46 of the Air Pilot and para. 13 of Part I of the Air Pilot Appendix are affected, and will be amended in due course.

No. 37 of 1928.)

Flights Across the Channel: Arrangements for Reporting and Search

It is hereby notified:—

1. Reporting of Aircraft on Flights Across the Channel

A. Pilots proceeding to or from the Continent in aircraft not equipped with W/T, or whose W/T is out of order, are recommended to avail themselves of the arrangements which have been made for signalling their passage across the Channel. These arrangements are as follows:—

(i) An aircraft leaving England must circle once at a height of not more than 1,000 ft. at Lympne Aerodrome, and again circle in a similar way at one of the reporting points on the Continental side, namely:—Ostend Aerodrome, St. Ingelvert Aerodrome, Calais semaphore station at Village des Baraques, Alprech semaphore station, 4 kms. S.S.W. of Boulogne Harbour.

(ii) Similarly, an aircraft leaving the Continent must circle once over one of the reporting points on the Continent and once at Lympne Aerodrome.

(iii) It is of the utmost importance that a pilot who signals his departure on one side of the Channel should not fail to signal his arrival when he reaches the other side, as such failure may result in search operations being put into force as described in paragraph (2) below.

B. In the case of an aircraft fitted with W/T, the pilot will report his position on crossing the coastline on either side of the Channel, and in emergency will give distress calls, in accordance with the procedure laid down in Notice to Airmen No. 8/1928, and in Part III of the Appendix to the Air Pilot: Great Britain.

2. Assistance to Aircraft in Distress in the Channel

The circumstances in which search and rescue operations will be begun are as follows:—

(i) On receipt of a distress call from an aircraft fitted with W/T, or
(ii) On receipt of reliable information that an aircraft in distress has been sighted, or
(iii) If an incoming aircraft is more than one hour overdue, or the report of an outgoing aircraft is more than 1½ hours overdue.

In accordance with (iii), an aircraft which has signalled its departure from one side of the Channel by circling, but fails to signal in a similar manner on the other side, is regarded as missing after the intervals mentioned and search operations are begun.

The search and rescue service which may be called upon comprises tugs which are available at all times from Dover, Boulogne, Calais and Dunkirk, and motor lifeboats from Boulogne, Calais and Dunkirk during the hours when the French Air Union is operating. In addition, the Air Union during normal working hours will be prepared to lend such assistance as is possible by means of aircraft patrols. All shipping in the Channel will be warned by W/T to keep a look-out, and will be informed if possible of the position of the aircraft.

Pilots may be held liable for the expenses of search operations which may be undertaken by the French authorities and the Air Union.

AIR PILOT.—Para. 46A (published in A.P.M.S. 11) is affected, and will be amended in due course.

(No. 38 of 1928.)

Air Mails

THE Postmaster-General announces the issue of a new edition of the Air Mail Leaflet, giving particulars of the full summer services. The form of the leaflet has been altered in order to make reference to it as simple as possible, and a map showing the principal air routes which are used for mails from this country now appears as its central feature. The air fees for Letter Air Mails have been reduced for correspondence for many places, including Egypt, Estonia, Finland, Italy, Latvia, Lithuania, Russia, and United States of America. There are also alterations in the rates for some places in North and West Africa. New Parcel Air Mails have been opened to Denmark, Luxemburg, Norway and Sweden, in addition to the existing services to Belgium, Colombia, Paris, Germany, Holland and Switzerland. Copies of the new leaflet may be obtained from any Post Office. It is in stock at the larger offices, and where it is not in stock it can be obtained at short notice.

IMPORTS AND EXPORTS

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

For 1910 and 1911 figures see FLIGHT for January 25, 1912.

For 1912 and 1913, see FLIGHT for January 17, 1914.

For 1914, see FLIGHT for January 15, 1915, and so on yearly, the figures for 1927 being given in FLIGHT, January 19, 1928.

	Imports.		Exports.		Re-Exports.	
	1927.	1928.	1927.	1928.	1927.	1928.
Jan. ..	1,850	1,220	49,021	157,598	—	330
Feb. ..	679	1,772	63,080	118,622	—	345
Mar. ..	7,087	4,805	106,478	125,901	2,270	1,307
April ..	822	2,904	71,190	134,126	785	3
	10,438	10,701	289,769	536,247	3,055	1,985

Flight Subscriptions

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PUBLICATIONS RECEIVED

Report of the Daniel Guggenheim Fund for the Promotion of Aeronautics. Vol. XL, No. 1. 1926 and 1927. The Daniel Guggenheim Fund for the Promotion of Aeronautics, Inc., 598, Madison Avenue, New York, N.Y., U.S.A.

An Approach to Winged Flight. By John D. Batten, M.A., LL.B. The Dolphin Press, Spring Gardens, Brighton. Price 5s.

Reports: Nos. 273.—Wind Tunnel Tests on Autorotation and the "Flat Spin." By M. Knight. 274.—The N.A.C.A. Photographic Apparatus for Studying Fuel Sprays from Oil Engine Injection Valves and Test Results from Several Researches. By E. G. Beardsley. 277.—The Comparative Performance of an Aviation Engine at Normal and High Inlet Air Temperatures. By A. W. Gardiner and O. W. Schey. 278.—Lift, Drag, and Elevator Hinge Moments of Handley-Page Control Surfaces. By R. H. Smith. The National Advisory Committee for Aeronautics, Washington, D.C., U.S.A.

AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1926

Published May 17, 1928

26,653. W. E. GRAY. Undercarriages for aeroplanes. (289,109.)

APPLIED FOR IN 1927

Published May 17, 1928

- 1,517. GLOSTER AIRCRAFT CO., LTD., and H. P. FOLLAND. Means for attaching fabric coverings to planes, etc. (289,134.)
1,607. VICKERS, LTD. and H. J. PAVN. Automatic guns carried by aircraft. (289,139.)
8,371. C. R. FAIREY and H. F. ROBERTS. Loading confined spaces such as aeroplane fuselages. (289,238.)
9,049. S. E. SAUNDERS and H. KNOWLER. Gun mountings. (289,245.)
9,189. M. B. BLEECKER. Helicopters. (289,248.)
12,994. ARMSTRONG SIDDELEY MOTORS, LTD. and H. CANTRELL. Piston-rings for use on fluid-pressure engines. (289,264.)
24,631. M. A. KENNEY. Airplane landing and launching apparatus. (289,330.)

APPLIED FOR IN 1928

Published May 17, 1928

90. H. AND M. FARMAN. Pumps of the geared type. (283,951.)

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